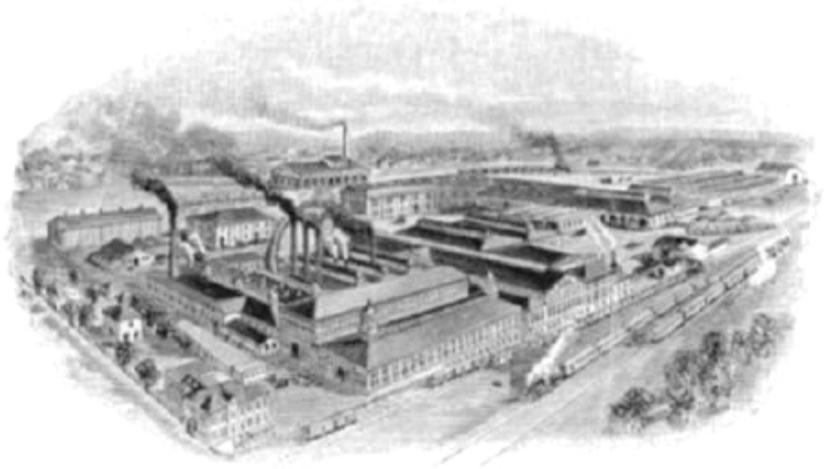
MACHINERY

TRICK COMPANY.

WAYNESBORO, PA. U.S.A.

This page left blank intentionally.



MAIN OFFICES AND FACTORY

GENERAL CATALOGUE 1907 FIFTY-FIFTH YEAR

FRICK COMPANY

INCORPORATED

Waynesboro, Franklin County, Pennsylvania, U. S. A.

Manufacturers "ECLIPSE" TRACTION AND PORTABLE ENGINES, THRESHERS, SAW MILLS, SMALL STATIONARY ENGINES AND STEAM BOILERS

A. O. FRICK, President
W. H. SNYDER, Vice-President
EZRA FRICK, Genl. Mgr., Sec'y and Treas.

ESTABLISHED 1853
CAPITAL $1,000,000
INCORPORATED 1885

BRANCH OFFICES:

ROCHESTER, N. Y., No. 11 Caledonia Ave.
PITTSBURG, PA., No. 924 Fulton Bldg.
HARRISBURG, PA., No. 21 N. Third St.
BALTIMORE, MD.
WINCHESTER, VA.
CHARLESTON, W. VA., Kanawha Valley Bank Bldg.
SALISBURY, N. C.

NASHVILLE, TENN., No. 501 Broad St.
COLUMBUS, OHIO, No. 490 N. High St.
INDIANAPOLIS, IND., No. 42 Kentucky Ave.
MADISON, WIS., No. 626 E. Main St.
ST. LOUIS, MO., No. 511 Granite Bldg.
DES MOINES, IOWA, No. 106 W. Fifth St.

KANSAS CITY, MO., No. 1213-19 W. Eighth St.
ATLANTA, GA., { No. 51 S. Forsyth St. / No. 406 Century Bldg.
NEW YORK, N. Y., No. 39 Cortlandt St.
CINCINNATI, OHIO, No. 308 Neave Bldg.
DALLAS, TEXAS, No. 360 Main St.
LOS ANGELES, CAL., 613 H. W. Hellman Bldg.

Frick Company Waynesboro, Pa.

INTRODUCTORY—1907

IT GIVES US PLEASURE to make our 55th bow to an appreciative public, with an enviable record of 54 years' existence in manufacturing the "Eclipse" Machinery. The Frick Works were established in 1853, and they grew to their present proportions simply because there is merit in their goods. It goes without saying that 54 years of successful and uninterrupted business represents a large and profitable experience that insures to our customers the full benefits that come only from long practice in the art of manufacture peculiar to the production of first-class machinery.

Fifty years ago the machinery we offered to the public was crude and ill-adapted for its purpose, compared with the goods we now offer, but in its day and generation it was the best that money could buy. The "Eclipse" Machinery to-day is the best that can be produced by skilled mechanics, 20th-century facilities and 54 years' experience. The material from which it is manufactured is the highest grade the market affords.

We have incorporated all improvements or appliances which have been tested and found of utility, but have not added so-called improvements with the view of using them simply as "talking points." These "talking points" simply complicate the machinery and increase the repair bills.

In each department we have a competent manager, whose constant aim is to keep his line up to the highest standard and in advance of all competitors. Our managers are men of the widest practical experience, and our customers thus have the benefit of the best engineering ability in this country.

In the department covered by this catalogue our specialties are traction engines, portable engines, threshers, saw mills, and small stationary engines and boilers. A description, with cuts of each, will be found in the following pages, and the points of advantage referred to. We have confidence in buyers to distinguish merit, and we believe that an examination will convince them that our "Eclipse" Machinery is all we claim for it.

If you can do so, come to see us—we will take pleasure in showing our machinery; or call on our nearest agent, or write us before buying.

FRICK COMPANY.

Railroad and Shipping Facilities.

OUR shipping facilities are of the best. We have direct connection with three of the greatest trunk lines of the country, viz., the Philadelphia & Reading, the Baltimore & Ohio, and the Pennsylvania Railroads, affording superior shipping facilities to every part of this country. Customers are thus assured of the best rates. We are in possession of every requisite, from the location, machinery, tools, skilled workmen, and every possible advantage, to manufacture our special lines of machinery, and meet competition in quality and price.

The "Eclipse" Traction Engine

Our "Eclipse" Traction Engine, so long and favorably known, has lately undergone a thorough and critical investigation at the hands of our experts, with a view of still further perfecting its good points and correcting the weak ones, if any such existed. It is the standard traction of to-day, and fully represents the most advanced practice in this special department of steam engineering.

In the first place, we believe in special adaptation of all things to an end, and a certain proportion of parts that theory, coupled with long experience and intelligent observation, has taught to be the best; therefore, you will find that our engine and boiler are perfect types, and that the material we use in their construction (each of the several kinds) is the best for the purpose to which it is put.

In case of breakage or wear of parts, we remind our customers that all parts are made interchangeable and can be duplicated.

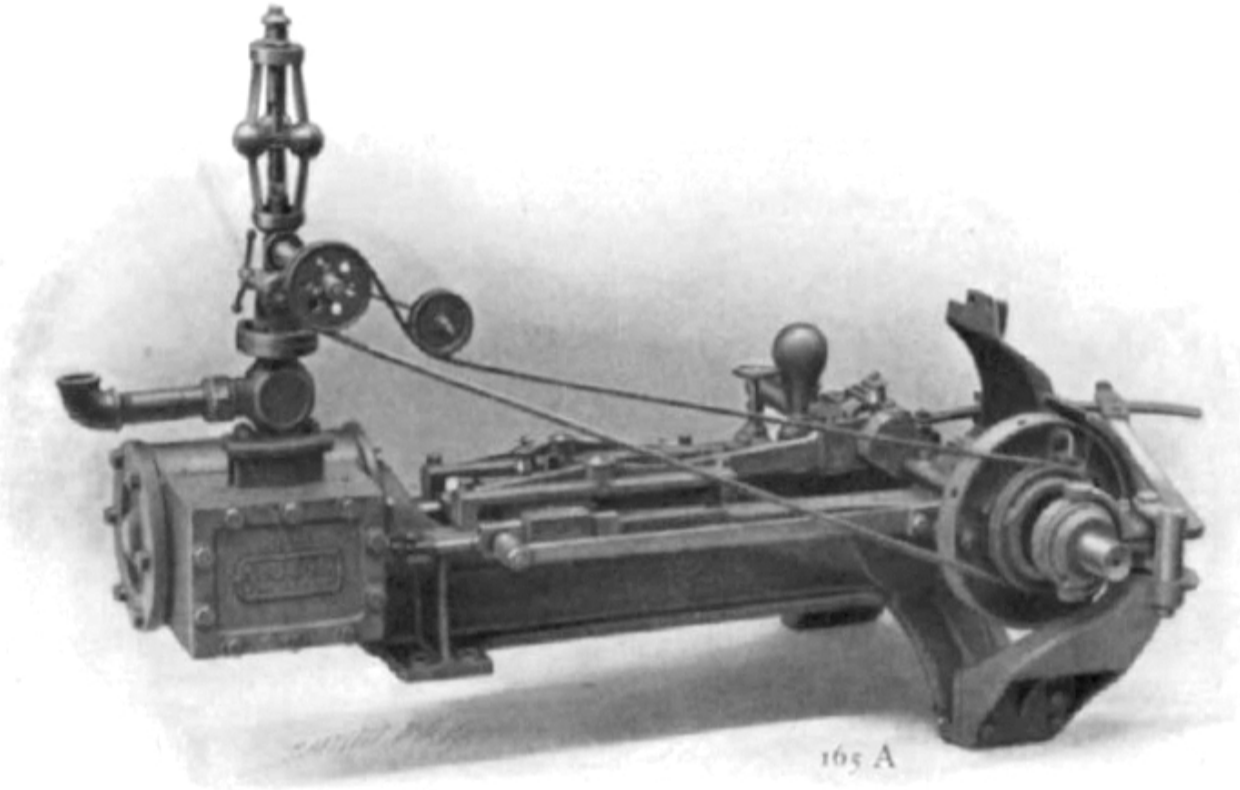
It is cheaper and better to send direct to our factory or to our authorized agencies for parts needed, than to run a risk by allowing local repair shops to attempt to supply your wants.

CYLINDER. Cylinder and Steam Chest are cast together, there being only one joint to pack. The steam chest cover is fastened on with studs, making it easy to remove. The ports are large and arranged with free exhaust, thus reducing back pressure to a minimum. The Slide Valve is of the standard locomotive type, and is made of close-grained iron absolutely steam tight and properly proportioned in accordance with the best engineering practice.

PISTON. The Head and Follower are of cast iron. The head is secured to a steel piston rod accurately turned and finished, and provided with a long stuffing box which permits a steam-tight joint without unnecessary friction. Our cylinder rings are turned slightly larger than the cylinder and carefully fitted, thus preventing any leakage of steam.

CROSSHEAD. Crosshead and Pin are made in one-piece casting and designed with liberal bearing surfaces provided with gibs, or shoes, of special anti-friction metal, oil ways, and ample means of lubrication and adjustment.

CONNECTING ROD. The Connecting Rod is made of steel and is complete with straps, gibs, and boxes of the most approved type, all machined with special tools and fitted with much care.



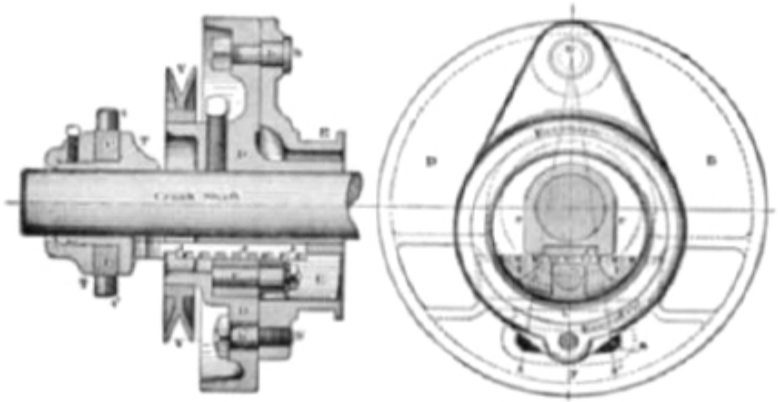
165 A

CRANK SHAFT. This important feature of every steam engine is of center-draught design in the "Eclipse," and forged with great care from specially selected stock into a solid forging complete in itself. Our method of forging, slotting and machining this piece practically eliminates any possibility of a flaw or defect, has smooth and frictionless surfaces on pin and bearings, is large in proportion to rated H. P., and further reinforced by generous fillets.

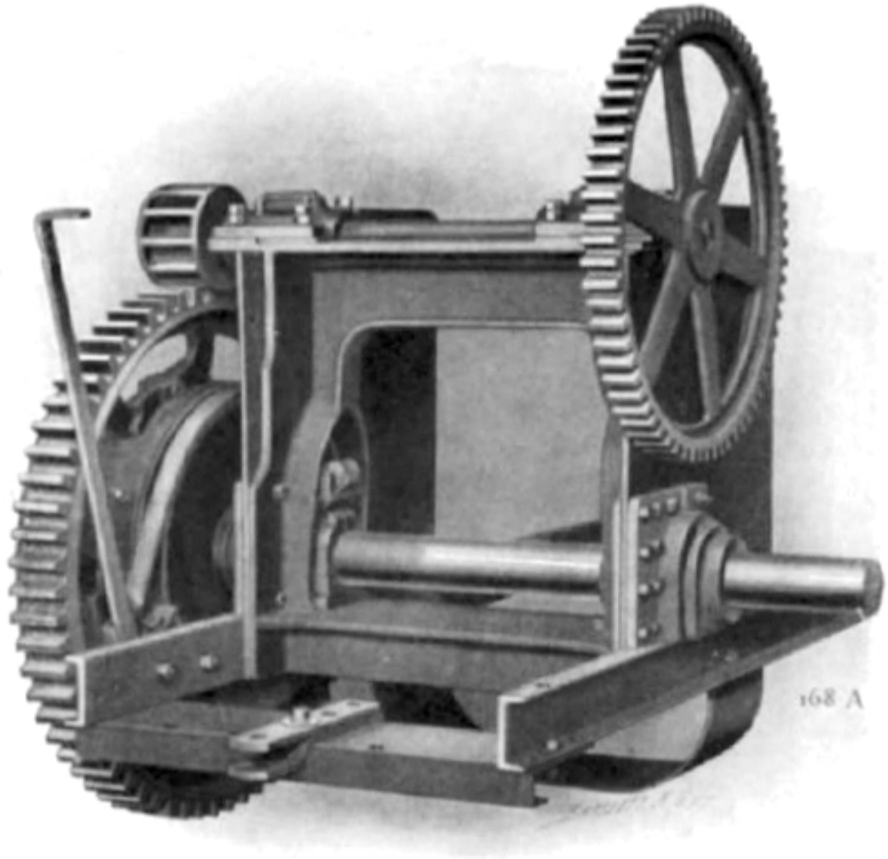
BED. The Engine Bed is a solid casting designed with a view to stiffness and rigidity, being reinforced by flanges and webs and a careful distribution of metal to parts subjected to the most strain, thus insuring perfect alignment of the engine at all times; has large bearing surfaces for crosshead; is provided with pedestals for crank-shaft bearings, and is shaped to catch and drain all surplus oil into a receptacle provided for that purpose. The crank-shaft bearings have large babbitted surfaces with quarter-box adjustment, and large oil wells with carefully shaped oil ways conveniently located, lubricating all wearing surfaces.

REVERSE. Our new Patent Reverse Gear is a noteworthy feature; while it does away with that good old-fashioned link with all its good features, it retains and improves upon each feature, introducing some good features peculiar to itself. It has fewer parts, and is simple and durable.

BALANCED FRICTION CLUTCH. Provision has been made in the "Eclipse" Traction Engine for conveniently and instantly disconnecting the Traction Gearing from engine proper, by means of an accurately balanced Friction Clutch of approved design. This is accomplished without shock or jar



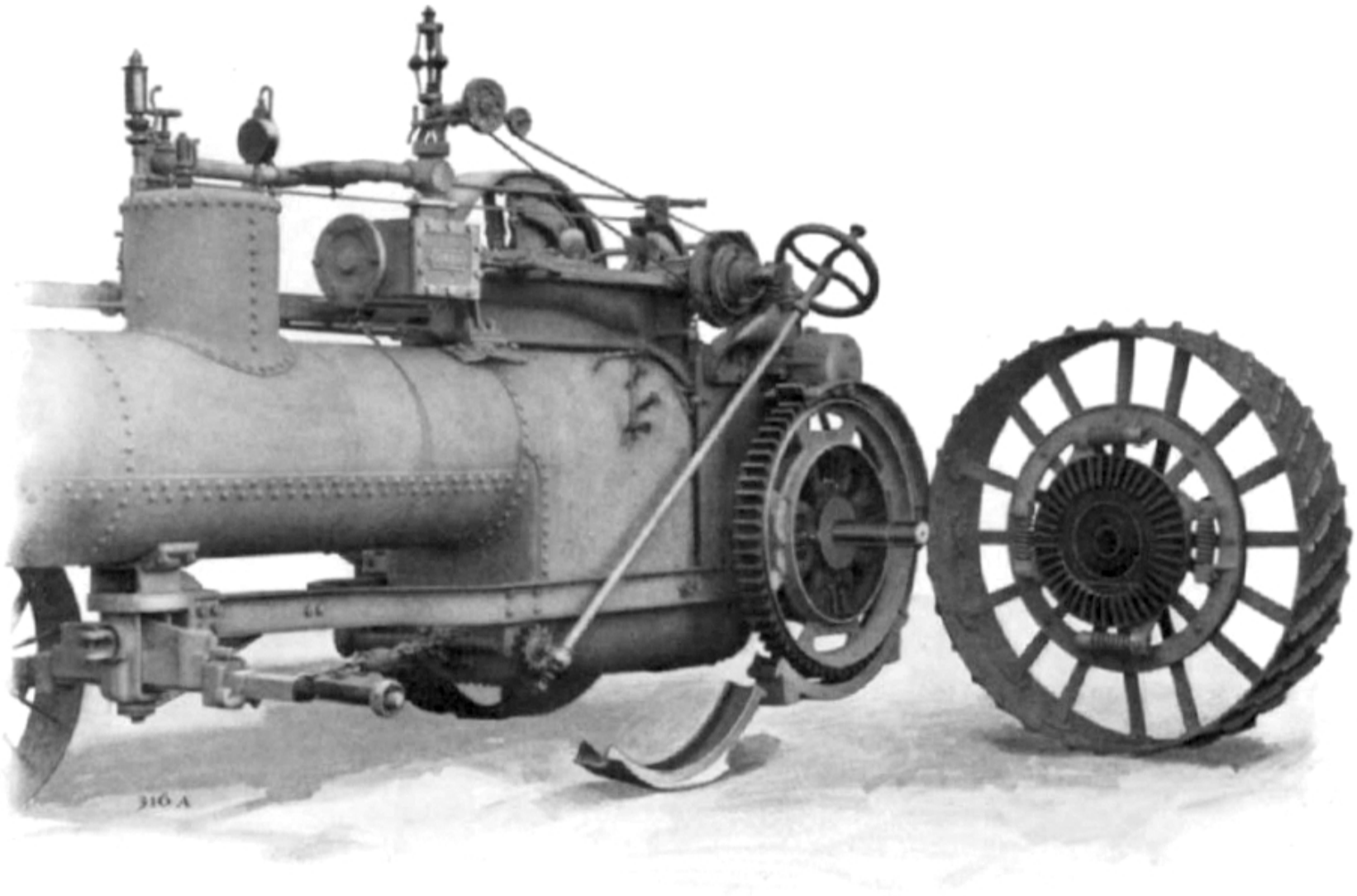
Our Patent Reverse Gear.



168 A

by simply shifting an easy working lever. The simplicity of this arrangement is remarkable. Adjustments are rarely needed, and when required are easily made by means provided.

GEARING. Engine, gearing and main axle mounted independent of the boiler which is thus relieved of all working strain. Simple and direct method of gearing from engine to main axle, avoiding the use of a long train of gears, link chains, sprocket wheels, and the various clumsy and unmechanical arrangements. Improved patented compensating gearing contained in main axle gear, provided with locking lever which can be used, when it is desired, to connect and use both traction, or ground wheels, as drivers in case of an emergency. The use of patent elastic springs, or cushion

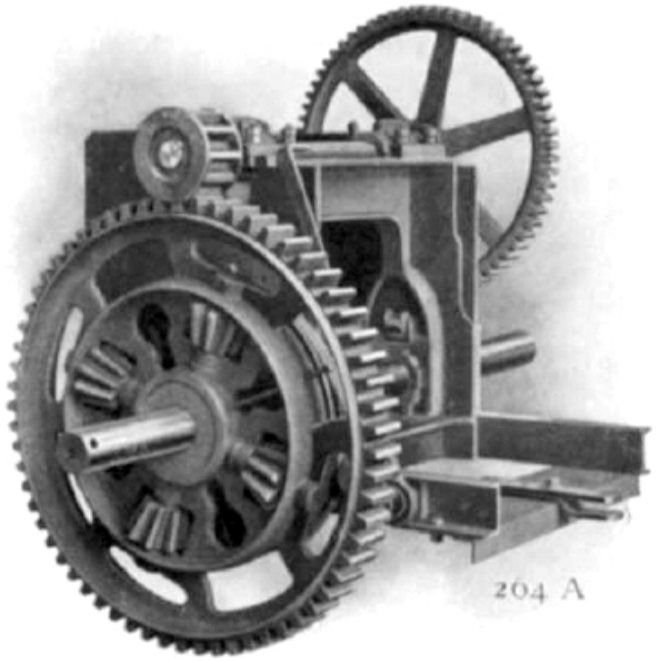


Our system of mounting Engine independent of Boiler is clearly shown by this cut. The steam boiler is relieved of all working strains, and instead of carrying the Engine is carried by it, and by use of sliding joints is left free to expand and contract without injury.

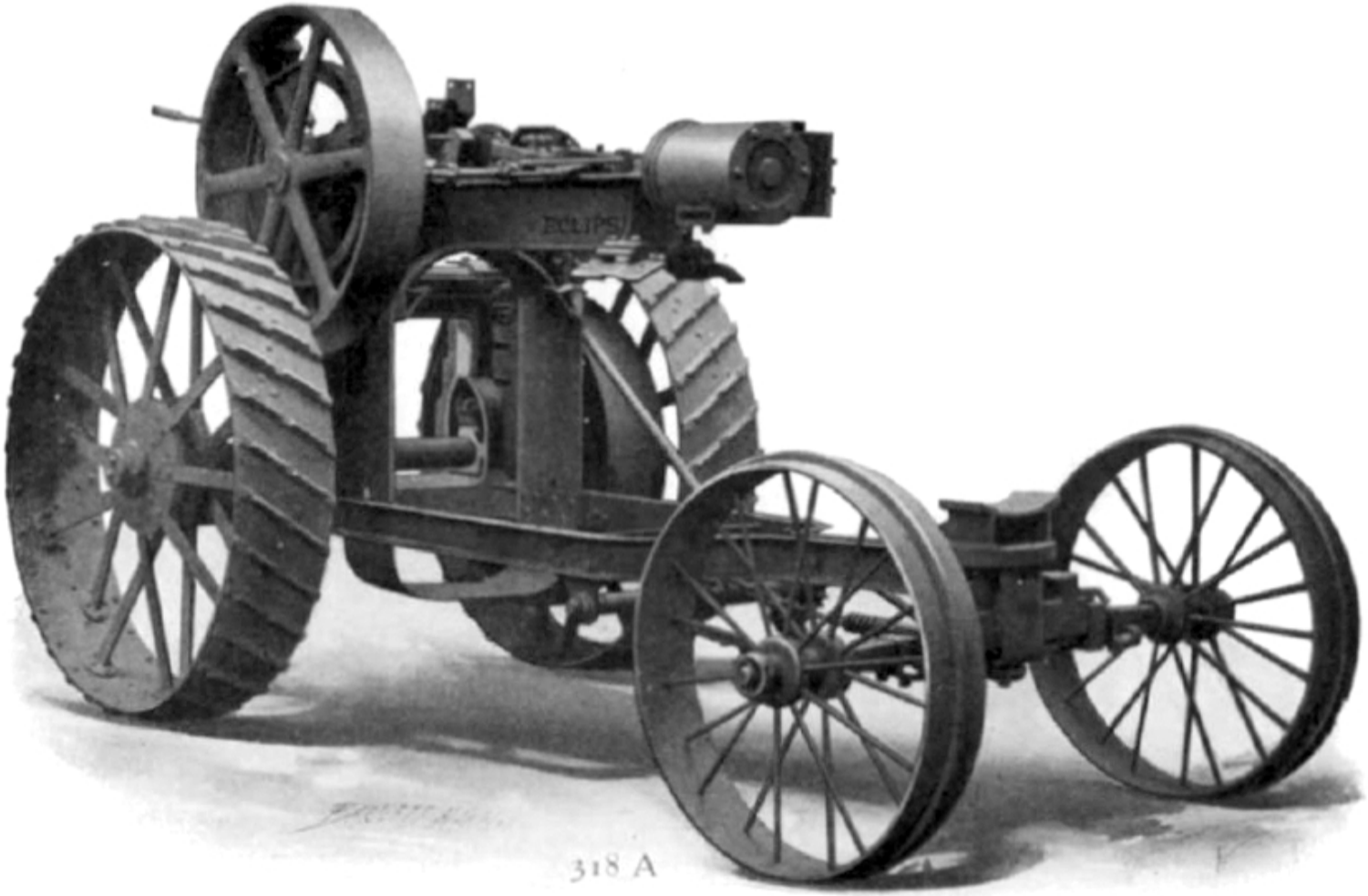
connection, in main driving gear transmits the power of the engine to the axle without shock, thus avoiding breakage of gearing or attached parts. All gearing and wearing parts thoroughly encased in patent dust-proof covers, and provided with self-oiling features and devices, so engine can be lubricated while in motion.

The independent steel frame, showing clearly the grand features of construction peculiar to our "Eclipse" Traction Engine, by means of which we are enabled to dispense with the dangerous and common practice of using the steam boiler as the foundation upon which to build and carry the whole system of machinery, with its brackets and bearings bolted thereto, for supporting gearing, engine, wheels and other working parts, thus transmitting through the shell of the boiler all the severe working strains and shocks, which tend to produce leaking seams, short life and weaken the whole structure of the boiler itself, causing in the course of time disastrous explosions, the result of faulty principles of construction; not to speak of the difficulty of keeping machinery in line, and working with the least possible wear and tear, absence of hot bearings and friction when depending upon and rigidly attached to such an unstable and changeable base as a steam boiler, which, expanding and contracting with the heat and pressure, makes a safer and more mechanical and common-sense construction desirable. Acting, therefore, upon the principle that the proper and only function of the steam boiler should be and is only to furnish steam, and that it should not be saddled with any other duty, we devised and patented the system of an independent structure for supporting and connecting the entire working machinery separate from the steam boiler, which, instead of carrying the weight and being burdened with the duty of transmitting working strains of machinery, is entirely relieved of same and is carried by instead of carrying. The photos show plainly the construction, but the details will perhaps need further explanation to make the principle clearly understood.

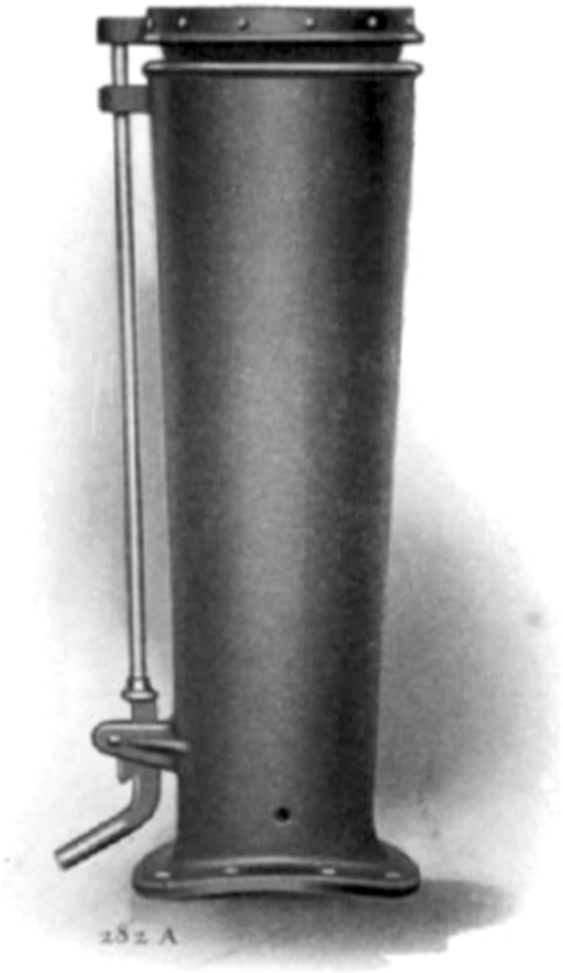
It will be seen that a pair of heavy steel channel beams reach from the front to the rear axle. Riveted to these, opposite each other, at the rear end of machine, are a pair of stout side plates which extend upward and support the steam engine, countershaft and main axle bearings. Upon the front axle is provided a chair, which supports the front end of boiler; a broad strap hanger or stirrup is attached to the channel irons in the rear for supporting fire-box end of boiler. The whole arrangement thus forms a truck, which carries the boiler as safely and independently as if mounted on a separate conveyance, but does so without straining it. Expansion and contraction are provided for at the points where cylinder end of engine rests upon boiler and where the boiler rests upon the forward truck, by sliding joints of simple construction. To fully appreciate the value of our independent system of mounting, it is only necessary to call attention and ask you to compare with the old-fashioned and common practice of bolting the engine and gearing direct to the boiler, with all its troubles, avoided by our patent system of construction.



204 A



Right-Hand Side. Separate Steel Frame which supports Engine, Gearing and Axles, independent of Steam Boiler



The above cut illustrates our improved Smoke-stack with adjustable cone-shaped screen spark arrester, used on the "Eclipse" Traction Engine.

BRAKE. A powerful Safety Brake is used direct upon main axle, so that in case of breakage of gearing or engine shaft, there can be no danger of losing control of machine.

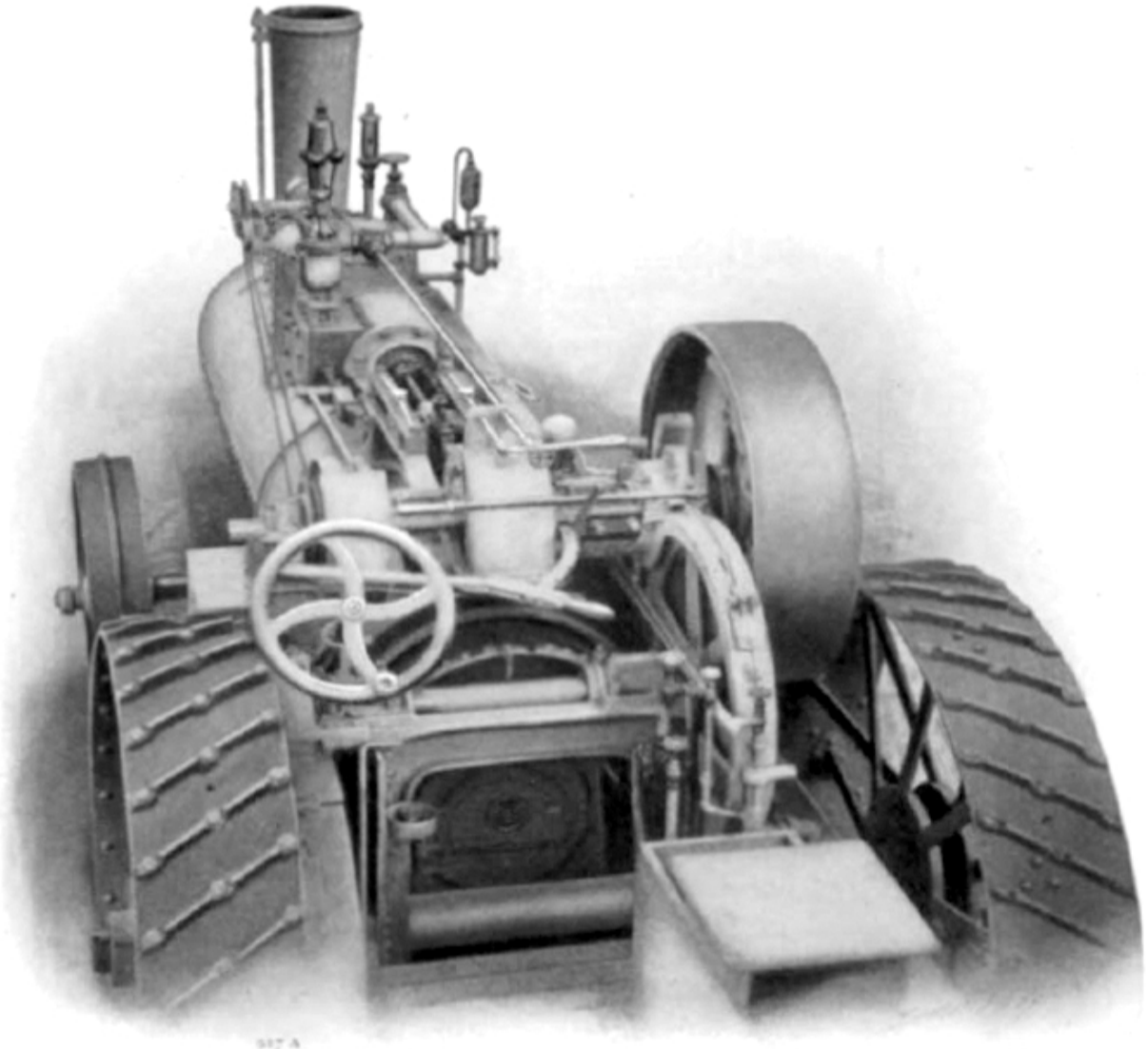
FRONT AXLE. The front of the engine is carried on springs provided with set screw to fasten solid when running under belt. Note our method of mounting boiler on saddle bracket with a sliding joint which admits of contraction and expansion of boiler without strain to either. The front of channel-iron frame being securely attached to the saddle, makes the best possible construction. Note all our engines are arranged with front hitch.

The Front Wheels are made of all steel, except the hub, which is of cast iron, and so constructed as to produce a strong and durable wheel. We have used this same construction of wheel for years and it has given universal satisfaction.

TRACTION WHEEL. Special attention is called to the construction of the Traction Wheel, with its flat riveted spokes, heavy and broad steel tire and steel cleats, which are secured to the wheel by stout rivets, and are of such shape as to wear well and prevent slipping, allowing at the same time the engine to run over a hard road without jolt or jar. This is the strongest form of construction and most satisfactory of any wheel in use. Provision is made in the traction-wheel rim, when required, for using removable spikes or spurs to prevent slipping upon frozen roads, also for attaching large mud cleats.

BOILER. The Boiler of the "Eclipse" Traction Engine is manufactured after the most approved principles, and out of the best material obtainable. It is built with a circulating water bottom and water front. The circulating water-bottom construction enables us to produce practically an air-tight ash pan, making it perfectly safe to leave engine stand with no possible danger of setting fire to surrounding buildings, or steam rising unexpectedly. The Boiler is made entirely of steel, which does away with the objectionable cast or malleable iron rings employed by many manufacturers. The crown sheet is so arranged as to be protected by water when going up or down hill. Notice long smoke box and position of stack to prevent throwing fire. A cast-iron stack is used with adjustable cone-shaped screen spark arrester, so that the screen can be easily adjusted to be open or closed, as desired.

The "Eclipse" Traction Engine



End View — "Eclipse" Traction Engine — Fuel Box and Engineer's Platform in Position.

GOVERNOR. All our Engines are fitted with the well-known Pickering Governor with automatic stop motion, spring speeder and Sawyer's lever. In addition to the range of adjustment by means of spring speeder, we furnish an adjustable governor pulley, which makes it possible to adjust the engine for a much wider range of speed than can be done by means of the spring speeder only. This adjustable governor pulley can be made larger or smaller, at the convenience of the operator.

PUMP. The long-tried Crosshead Pump is used on the "Eclipse" Traction Engine, but when wanted the Independent Steam Pump will be furnished at slight additional cost. In connection with the Pump, the well-known method of running water through exhaust steam heater is employed. In addition to pump, we fit all our traction engines with injector, giving a double method of supplying water to the boiler. Both pump and injector are within easy reach of the operator.

BRASS TRIMMINGS. An approved standard type of valves and fittings are used on the "Eclipse" Traction Engine, which experience has taught us are best adapted to the purpose for which they are intended.

PIPING. Great pains have been taken in the piping of the "Eclipse" Traction Engine so as to make it simple and convenient, yet the best means served for economy and durability. No expense has been spared to arrange all piping in such a way as to enable the operator to drain all parts when necessary in cold weather.

AXLE TANK. In order to meet the demand for carrying a greater supply of water on the road, we have adopted the Axle Tank which we find not only meets this demand, but it is a great convenience to the operator and adds considerable to the appearance of the engine. Ample facilities are provided for filling the tank by means of steam lift and hose. A very substantial improvement in the method of taking the water out of the tank has been adopted, by drawing the water from the bottom of the tank through an inserted pipe which ends in a wire cage. This device puts an end to the trouble of having pump and injector clogged with sediment in tank.

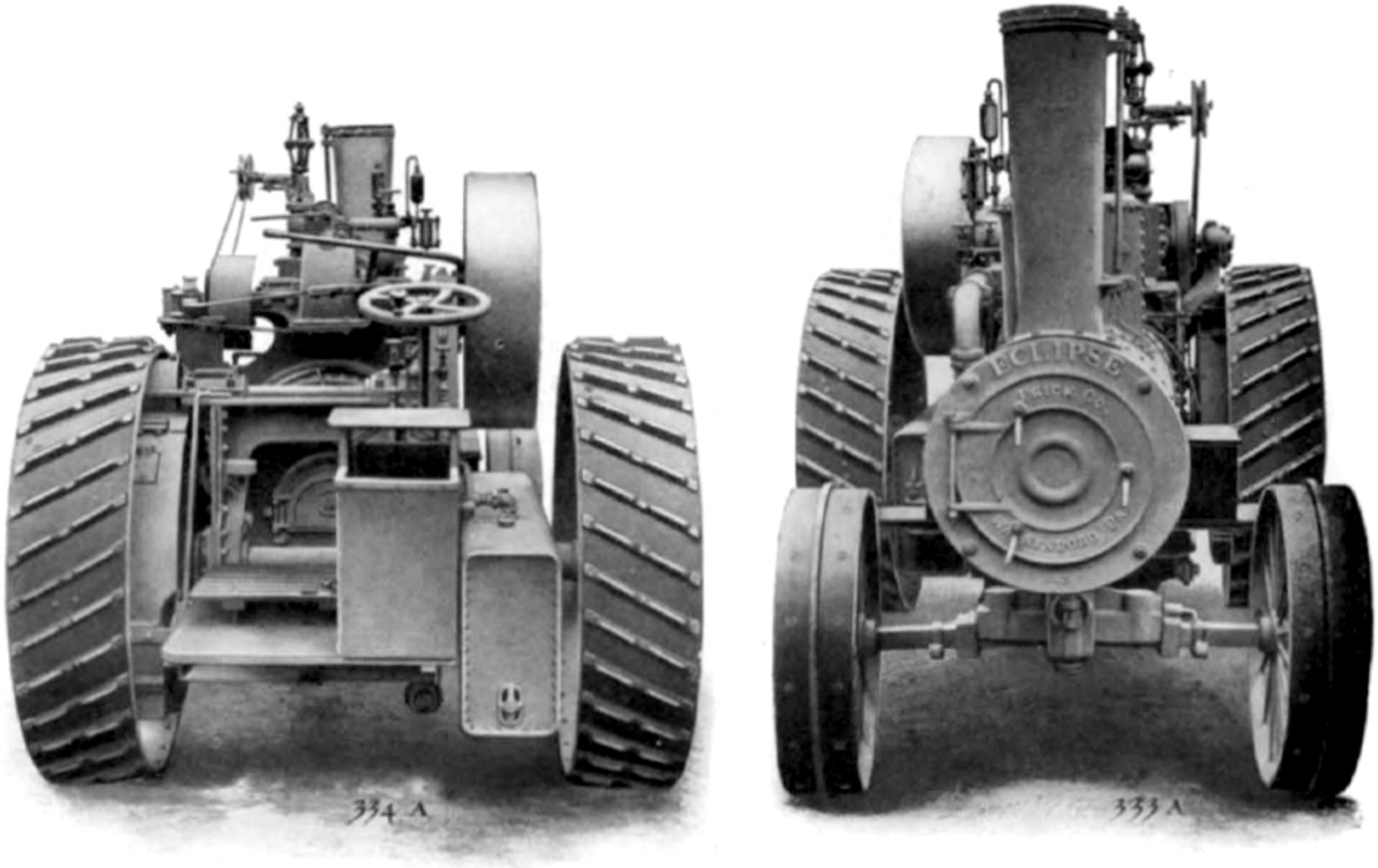
PLATFORM. Unlike other traction engines on the market, the "Eclipse" is fitted with removable engineer's platform. This feature not only enables you to belt backward as well as forward, which is a convenience that cannot be overestimated, but makes it possible to fire from the ground when running under the belt. A special platform on springs is arranged for the engineer, thus doing away with unnecessary jar to the operator when going over rough roads. A large fuel box with ample capacity is provided and arranged, with a seat for the engineer.

All operations are placed directly under control of engineer without moving from platform, the brake, throttle valve, reversing device, steering wheel, pump, injector, blower, water gauge, whistle, friction clutch, oiling, dampers, firing, etc., being within easy reach.

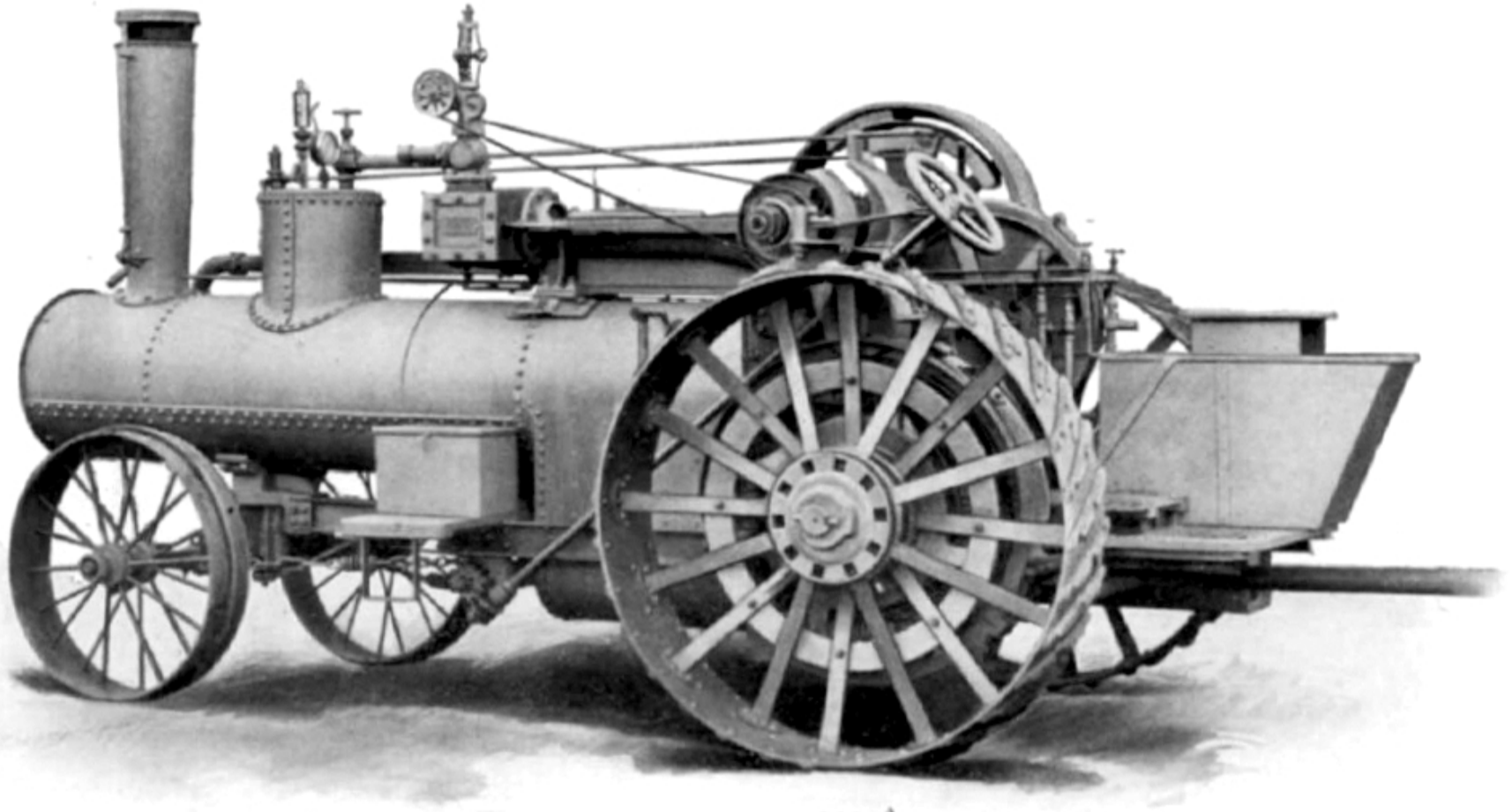
View of Exhaust Connection from Heater to Exhaust Nozzle

The flanged joint, where attached to heater, is provided with ball-bearing joint.

Notice simple method of removing exhaust nozzle.



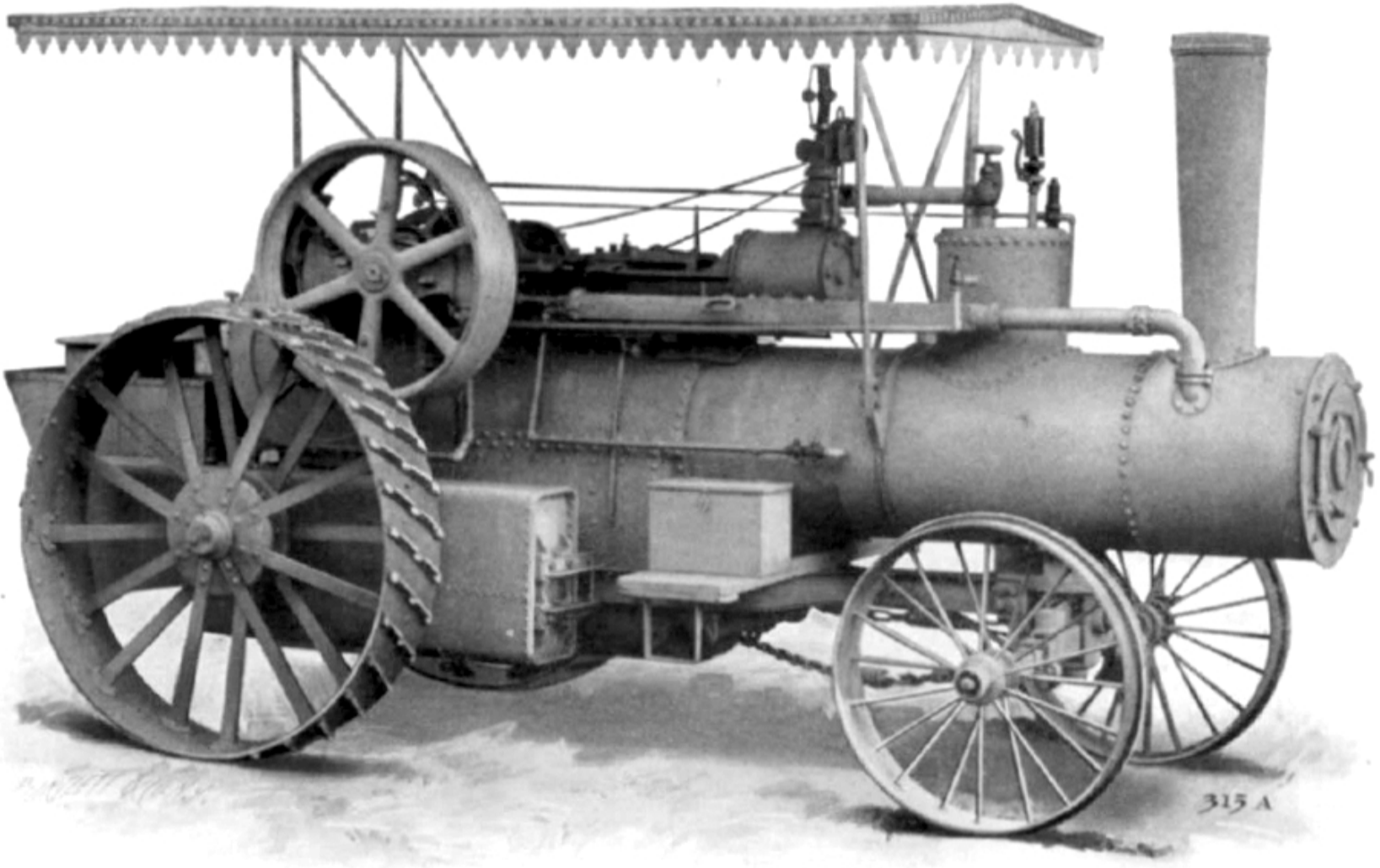
"Eclipse" Traction Engine—Front and Rear View



337 A

The "Eclipse" Traction Engine—Left-Hand Side View

Note how thoroughly the gearing is protected and encased in tight dustproof covers. This feature is of great value as it ensures long life to the gears, noiseless operation and absence of undue wear.



The "Eclipse" Traction Engine—Right-Hand Side View

The above is a cut showing fly-wheel, friction clutch, feed-water heater, and direct-connected and positive-feed pump driven from engine crosshead.

NOTE—Belt can be run forward or back, as desired.

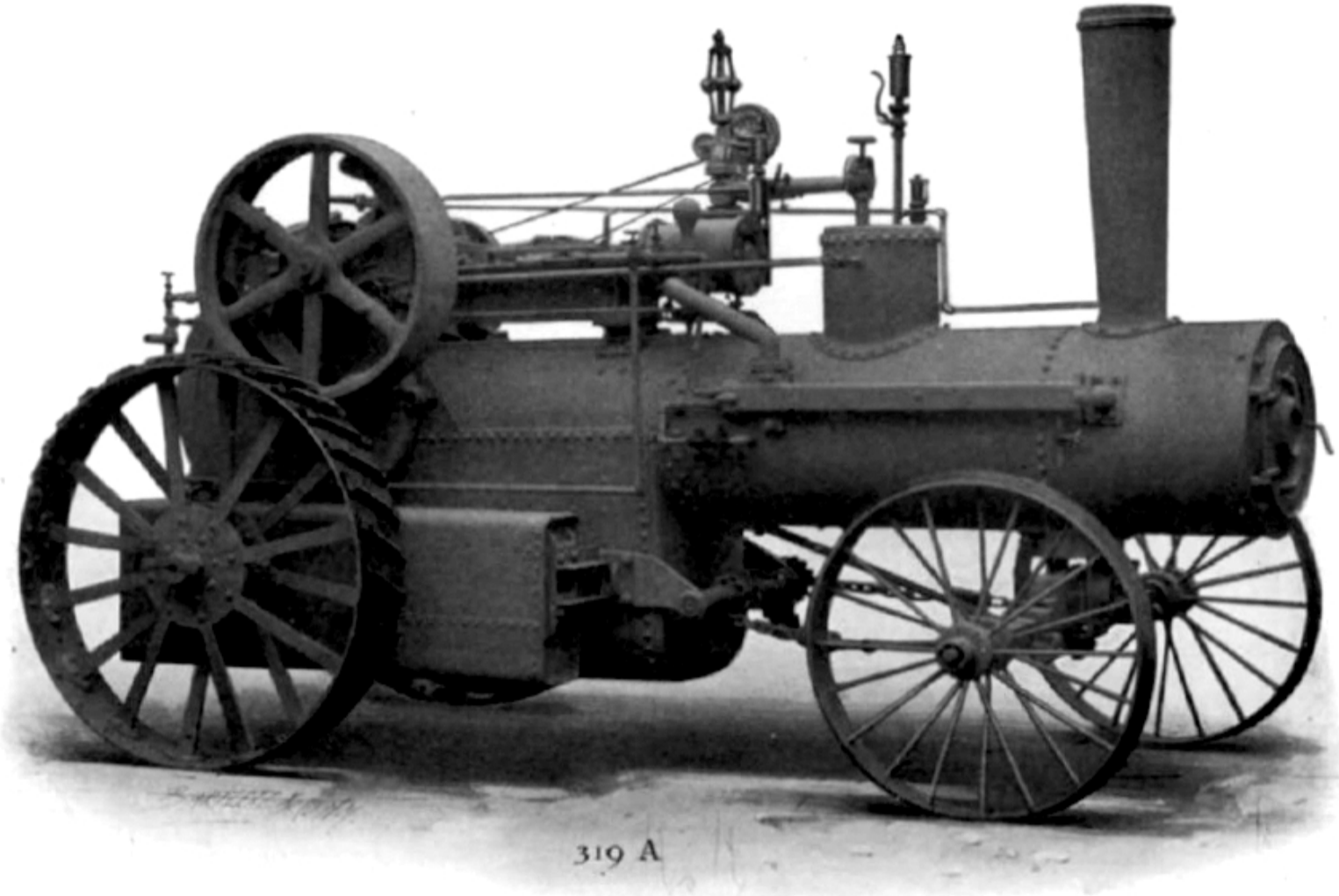
Table of Dimensions, "Eclipse" Traction Engines

Cylinder			Fly-Wheel		Boiler						Traction						
Diameter, Inches	Stroke, Inches	Revolutions per Minute	Face, Inches	Diameter, Inches	Length over all	Waist	Length of Fire-Box	Height of Fire-Box	Number of Flues	Diameter of Flues	Length of Flues	Diameter of Rear Wheel	Face of Rear Wheel	Diameter of Front Wheel	Face of Front Wheel	Distance between Axles	Length of Engine over all	Extreme width of Engine
6½	8	265	8	36	122	26	36	33	26	2	54	57	10	41	5	8′– 8″	13′–6″	6′– 7″
7	9	265	8	36	137	26	36	33	32	2	69	63	12	41	5	8′–10″	15′–1″	6′– 9″
7½	9	265	8	36	137	26	36	33	32	2	69	63	12	41	6	8′–10″	15′–1″	6′– 9″
8	10	250	10	40	146	28	42	34	39	2	77	70	16	41	8	9′– 7″	16′–2″	7′– 9″
8½	10	250	10	40	151	28	42	34	39	2	83	70	18	41	10	9′– 7″	16′–7″	7′–10″
9	10	250	10	40	157	28	42	38	40	2	89	74	20	41	12	10′– 4″	17′–3″	8′– 8″

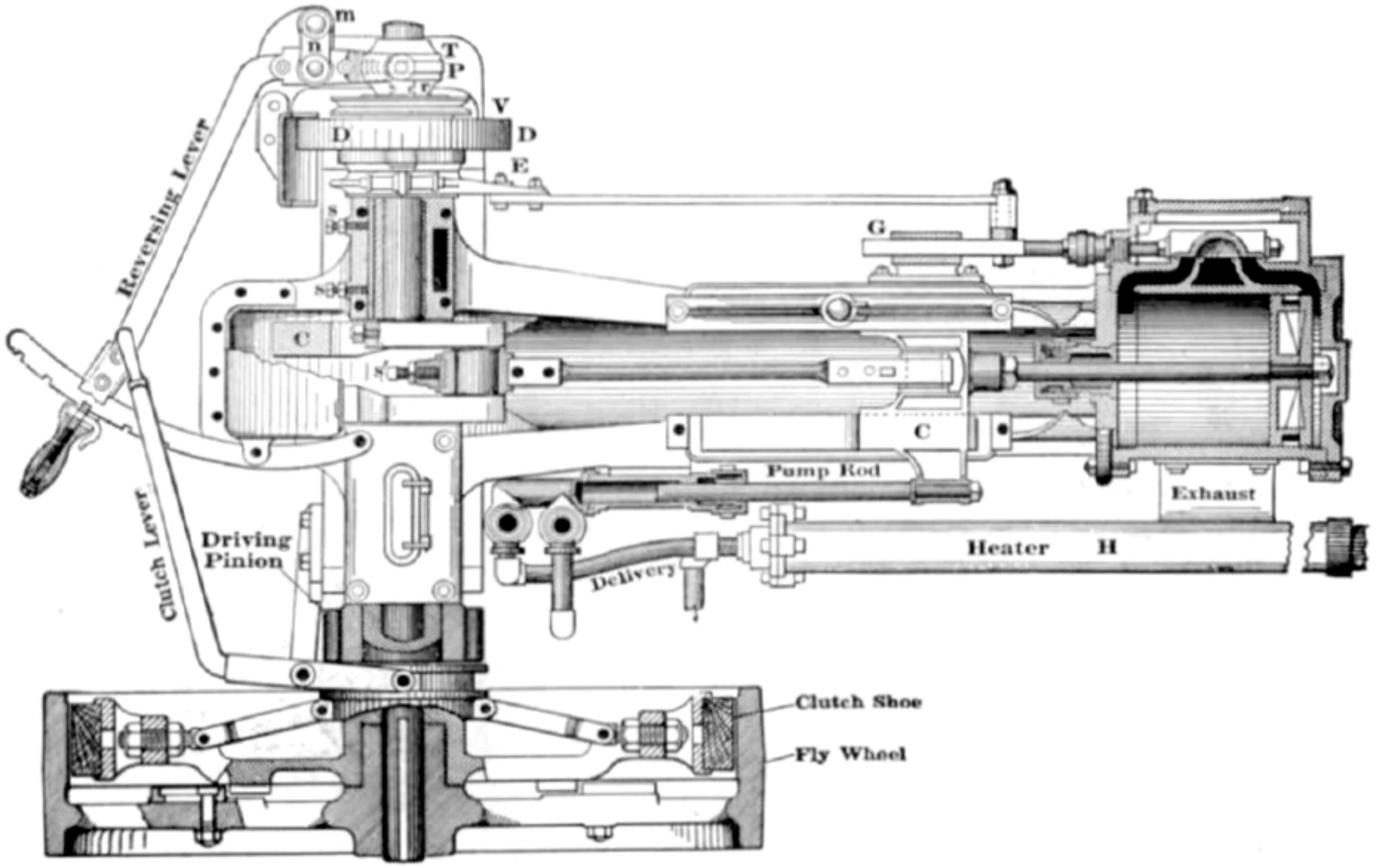
"Eclipse Junior" Traction Engine

TO meet the demands for a light, strong and durable traction engine of less price than our standard "Eclipse" Traction Engine we have introduced the engine shown on opposite page, and for the class of work it is intended to do, it is admirable and unsurpassed. If you ever hope to see a traction engine boiled down to first principles this is the one. Made as light as it is possible to make a good engine; made plain and simple, yet there is everything about it you need, in the right place and in the very best shape for business. It is solidly mounted, and all parts without a fault.

We build this engine with friction clutch, new reverse motion, steering attachment, pump and heater and injector. Boiler of steel with extended smoke box and side sheets, patented gear frame, patent expansion connection between engine and boiler. Everything first class and no cheap work about it.



A Special Light and Strong Traction Engine



The Frick Company Traction Engine

Plan view of "Eclipse" Traction Engine, showing arrangement of Patent Reverse Gear and Friction Clutch for Driving Pinion.

Cylinder			Fly-Wheel		Boiler							Traction					
Diameter, Inches	Stroke, Inches	Revolutions per Minute	Face, Inches	Diameter, Inches	Length over all	Waist	Length of Fire-Box	Height of Fire-Box	Number of Flues	Diameter of Flues	Length of Flues	Diameter of Rear Wheel	Face of Rear Wheel	Diameter of Front Wheel	Face of Front Wheel	Distance between Axles	Extreme width of Engine
One 9½	10	250	10	40	162	33	46	43	58	2	89	74	20	41	12	11′–3″	9′–1½″
Two 7	10	230	12	40	168	38	48	50	73	2	89	77	24	48	12	12′–0″	10′–0″

Our 1907 Models

20 H. P. Single-Cylinder "Eclipse" Traction Engine

This engine is designed along the same lines as our lighter traction engines illustrated on pp. 4 to 13 of this catalogue, having large axle water tank and balanced friction clutch. This engine is provided with large and capacious fuel box under engineer's spring platform, giving room for ample fuel and convenient of access.

Features Peculiar to 25 H. P. Double-Cylinder "Eclipse" Traction Engine

CROSS HEAD. Cross Head is made with shoes with wedge adjustment for taking up wear, top and bottom; shoes have generous length and width, thus reducing the wear to a minimum; adjustment is easily and quickly made.

CONNECTING ROD. Connecting Rod is made of wrought steel, with liberal brass boxes provided with wedge adjustment for taking up wear.

ENGINE BED. The Engine Bed for the two engines is made with bored guides for the cross heads and cast in one piece, but separated from the cylinders; is self-contained and securely fastened with reamed bolts to our celebrated Independent Steel Frame Work.

DOUBLE DRIVE. This engine is equipped with what is known as the Double Drive or a Master Gear attached to each drive wheel. We desire to call special attention to the manner in which these master gears transmit the power to the drive wheels. A glance will show its durability and desirability in case of repairs, as no fitting whatever is necessary on account of a slight variation of gear or traction wheel to apply it.

THE BOILER. As all users of traction engines know a good boiler is a large factor in the successful operation of a traction engine, with this in mind, we have designed and constructed this boiler along the most liberal lines—made of heavy material, double riveted seams, securely braced, with ample circulating space around fire box, and very liberal heating surface. We do not hesitate to say that we believe it will meet with the approval of the most exacting engineer.

PUMP. This engine is equipped with an Independent Boiler Feed Pump, with ample capacity; is conveniently located and easily accessible.

TANK AND PLATFORM. Special attention has been paid to make this part of the engine convenient. A large water tank constructed entirely of steel is located at the rear of the engine and in such a manner that it is easy to take on a supply of water without stopping the engine. The Fuel Box, which is placed on top of it, is also large and well made, and has a coal chute whereby the fireman can shovel his coal from the platform on a level with and close to the fire door. An Elastic Spring Platform is provided, on which the engineer and fireman stand, making it more comfortable in moving over rough roads than on other makes of engines.

Elevated Rear View, Double Cylinder "Eclipse" Traction Engine

Fuel box and engineer's platform removed.
Note arrangement of hitch, encased gearing, convenience of levers, two drive pulleys, and short steam connections.

Features Common to 20 and 25 H. P. "Eclipse" Traction Engines

Both these engines are built along the same general lines as our other or lighter types of traction engines, containing the following points which are peculiar to all "Eclipse" Traction Engines: *Engine, gearing and traction parts mounted on steel frame independent of boiler*, which is thus relieved of all working strains; boiler is large, with circulating water bottom and water front; spring connection between gearing and traction wheels; elastic connection in steering chain; main bearings on crank shaft with *brass quarter box* is adjustable by means of set screws; *engine is center-crank style, self contained, counter balanced*, strongly made with large and ample wearing surfaces; main axle and *countershaft bearing bracket is one solid piece*, thus insuring perfect alignment of gears under all conditions; main axle boxes removable; *bed plate is powerful and hollowed out to form a receptacle for oil; ample provision is made for expansion and contraction between engine and boiler* and pipe connections; traction wheels are of very strong construction, with large flat steel spokes riveted to steel tire and heavy cast-iron hub; everything directly under control of engineer and convenient for operating without moving from platform.

THE DOUBLE PORTED BALANCED VALVE. We desire particularly to call your attention to our Improved Double Ported Balanced Valve which we are using in our 1907 model engines. These valves are so designed that the pressure of the valve on the seat is reduced to a minimum and is only sufficient to prevent the valve from lifting off its seat. It will readily be seen that the wear on the working parts of the valve gear is almost entirely eliminated and that the power required to move the valve is reduced to a minimum. By double porting the valve, we get a quicker opening of the ports; in other words, for one-eighth movement of the valve we get one-quarter opening of the ports which admit the steam to the cylinder, thereby insuring maximum pressure against the piston from the beginning of the stroke to the point of cut-off.

CYLINDER. Cylinder and Steam Chest are cast in one piece, but separate from the engine bed, thereby obviating the necessity of renewing the bed in case of accident to the cylinder. The desirability of this can easily be seen when repairs are necessary. Cylinder is provided with large Double Ports, designed along the lines of the best engineering practice.

REVERSE. Another noteworthy feature of these engines is our Improved Patented Reverse, so constructed that with our double ported balanced valves the engine can be reversed under a full head of steam, showing that it requires considerably less power than usual to reverse the engine under ordinary conditions.

STEAM CONNECTIONS. These engines, like all "Eclipse" Traction Engines, are equipped with a shut-off valve in the steam connection to the cylinder next to the boiler, obviating the necessity of drawing the fire should it be necessary to make any repairs to the steam connections or throttle valve.

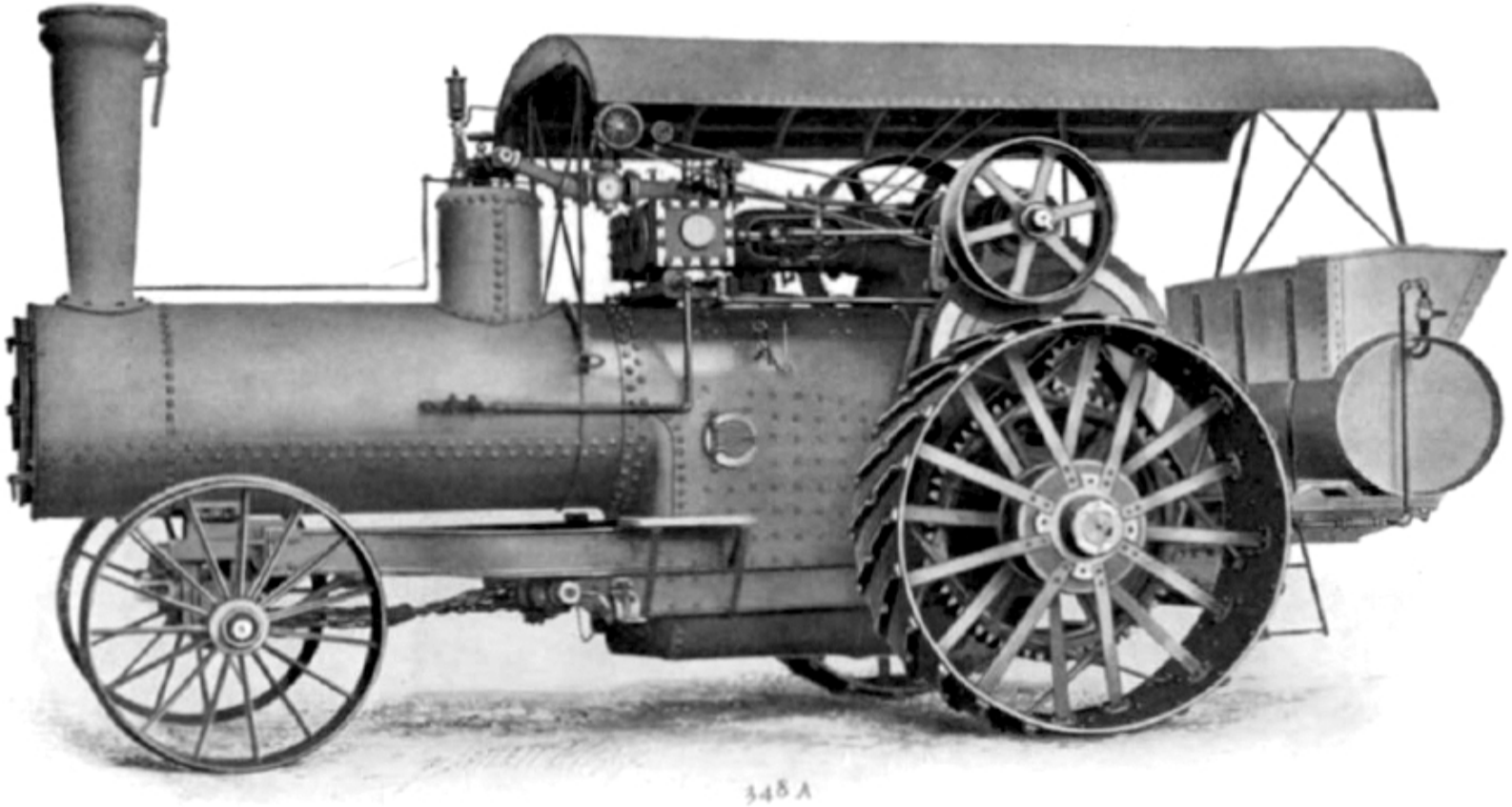
EXHAUST NOZZLE. In order to insure sufficient draft when the engine is working under light load and not too much when engine is working under heavy load, a very simple and easily adjusted Exhaust Nozzle is provided. This feature need only be tried to be appreciated.

STACK. These engines are provided with our Patented No Choke Spark Arrester, which can be raised or lowered from the engineer's platform.

AUXILIARY WHEELS. The Traction Wheels of these engines, as well as those of the 8 x 10 and 8½ x 10, are made with provision for attaching Auxiliary Wheels, thus enabling a wider tire to be used when engine is working in soft ground. The auxiliary wheels are constructed along the same lines as our other drive wheels, that is, have steel spokes securely riveted to steel tire and cast hub, easily applied and easily detached.

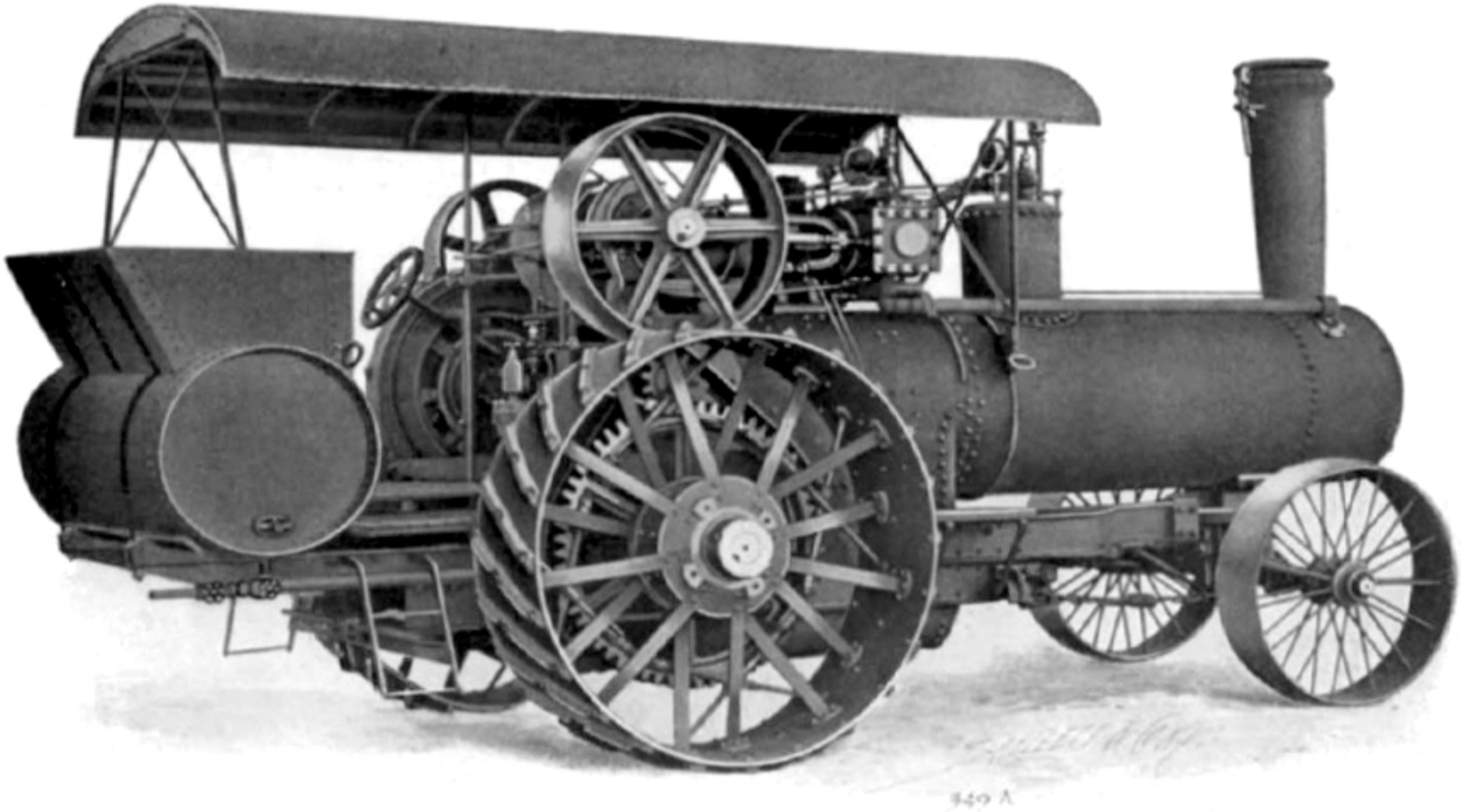
DOUBLE STEER. This engine is so constructed that with an ordinary kit of traction-engine tools, an engineer in a few minutes can change it from right to left-hand steer, or vice versa, as may be most convenient to the operator.

CAB. Engine can be furnished with large cab, giving ample protection to operating crew, as well as all wearing parts, from the weather.



Left-Side View, Double Cylinder "Eclipse" Traction Engine

Showing engineer's platform, substantial manner of transmitting power from the master gear to the drive wheel. Also double riveted longitudinal and girth-seam boiler, and central location of dome.



Right Side View, Double Cylinder "Eclipse" Traction Engine

Note manner of mounting boiler independent of engine, conveniently located side platforms, compact heater, and operating lever for spark arrester.

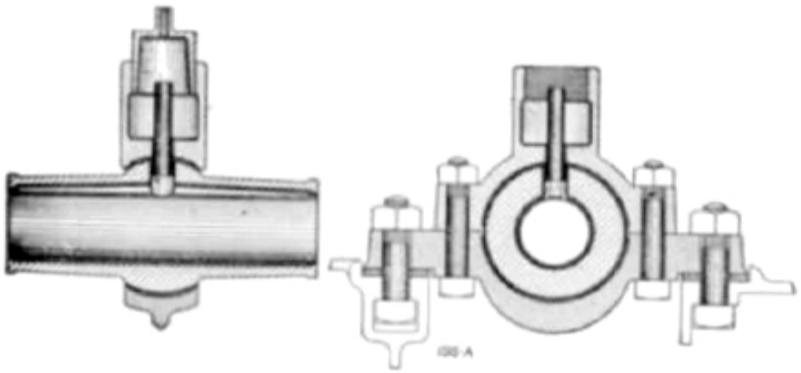
Special Heavy Duty

In Foreign Field

Western Threshing Scene

"Eclipse" as a Roadster

The "Eclipse" Machinery at Work



THE "Landis Eclipse" Thresher is the result of efforts to produce a machine of its class to thresh, separate and clean all kinds of grain and seeds in a most thorough manner, regardless of the conditions under which such machines should do good work, and to produce such machine by dispensing with useless and troublesome devices sometimes found in its class, which are often only a source of trouble, expense and a waste of much power.

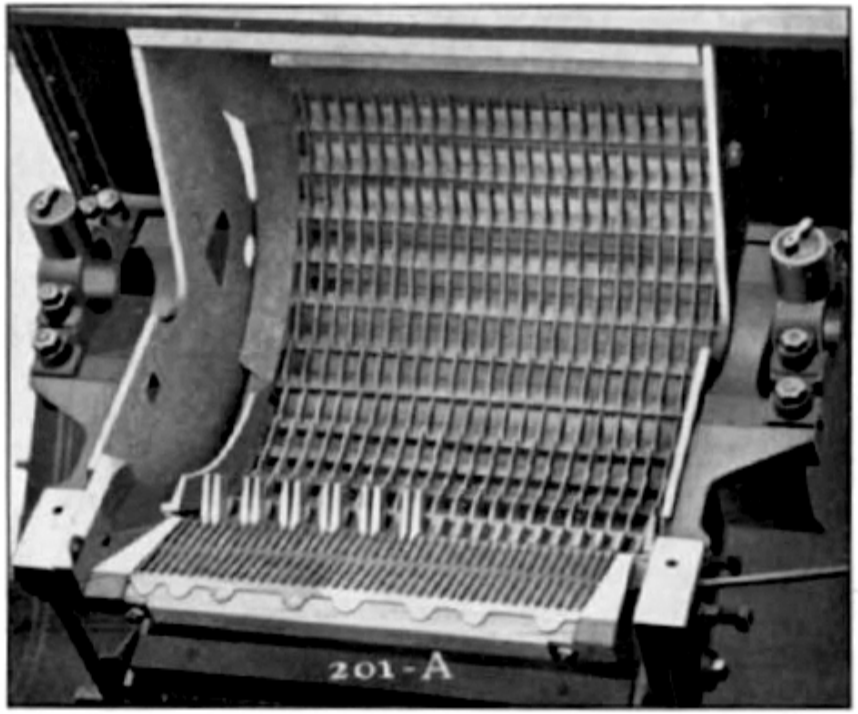
It may be useless for us to state that all builders of threshing machines claim to have the "best in the world," so we will try to present our reasons in the following brief description of a few of the main features of the "*Landis Eclipse*" for 1907 and try to be reconciled with the decision of the users of this class of machinery.

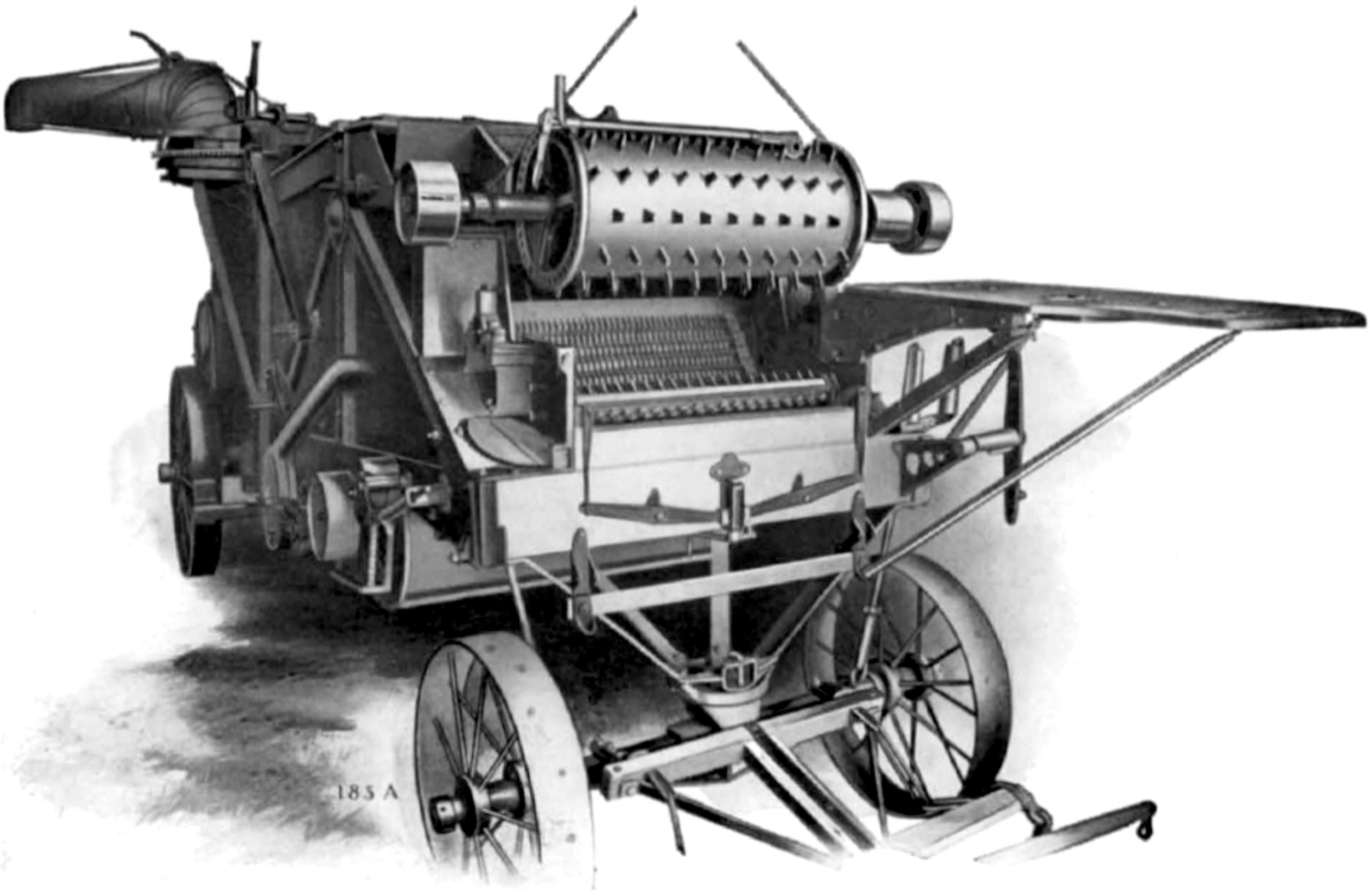
The design of the "*Landis Eclipse*" is certainly worth your attention. We believe it gives greater strength for its weight than is generally found in this class of machinery. Follow the outlines of the frame, which is a model of strength so much needed to thoroughly support all the parts of a machine from which so much is demanded, not only when in operation but while it is being hauled over rough roads, to say nothing about its exposure to sunshine, rain, heat and cold. The design of the "*Landis Eclipse*" will hardly be fully appreciated without seeing the machine.

No part of the framing is weakened by the use of lap joints, mortises and tenons, thus avoiding the common evil of the joints rotting by becoming soaked with water. All joints are formed by cast-iron joint plates and joined together by tie or joint bolts, and can always be kept tight.

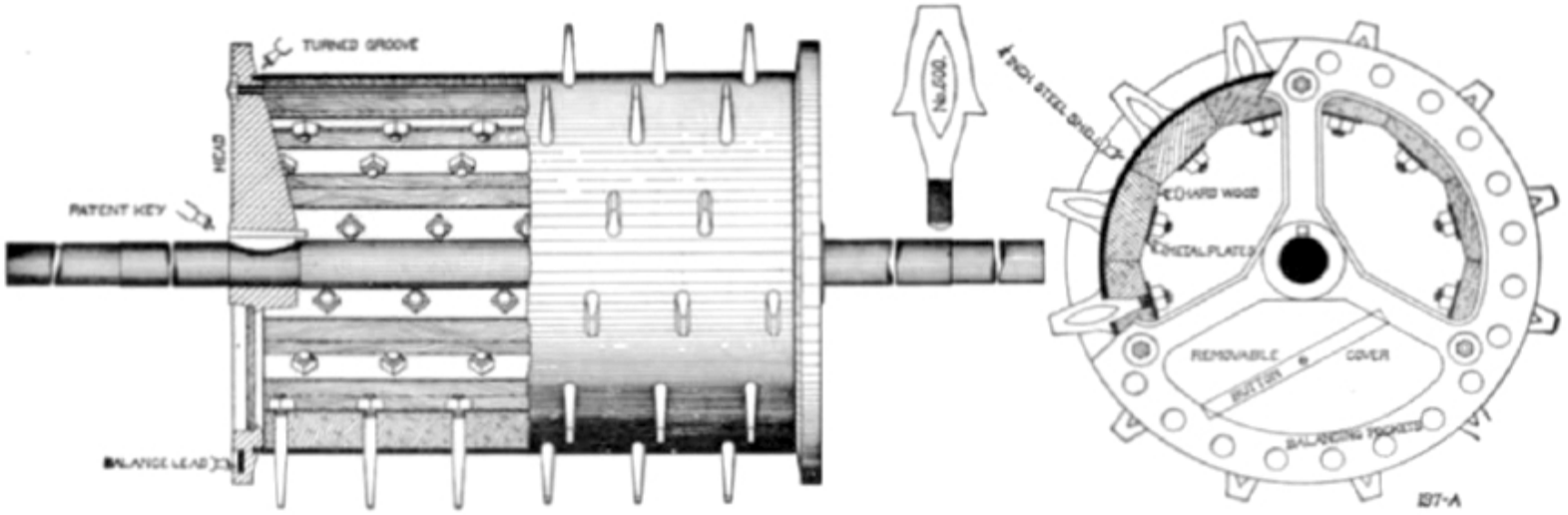
The thresher is self-contained. Its sides are cast iron, rigidly connected by iron and steel tie bars.

To these sides are attached the cylinder-shaft bearings, which are supported on a swivel, thereby insuring perfect alignment of the shaft and bearings under all conditions, and preventing friction and heating of the same.





The "Landis Eclipse" Thresher—Front View



The thresher does not in any way depend on the wood work or framing of the separator for strength, but is complete within itself and is carried by the front ends of the sills and front braces of the frame. The flanges of the thresher sides secure the braces to the sills and support the front end of the trunk of separator.

The thresher is composed of the "*Landis Eclipse*" closed cylinder, its toothed concaves, and an improved separating grate which, by most thorough tests, has proven to excel, we believe, any single device for separating grain and chaff from the straw that has ever been employed in a grain threshing machine. By the use of this new improved and most efficient grate, nearly all of the grain and chaff is separated from the straw immediately after it passes the toothed concaves and while the cylinder teeth still have hold of the straw.

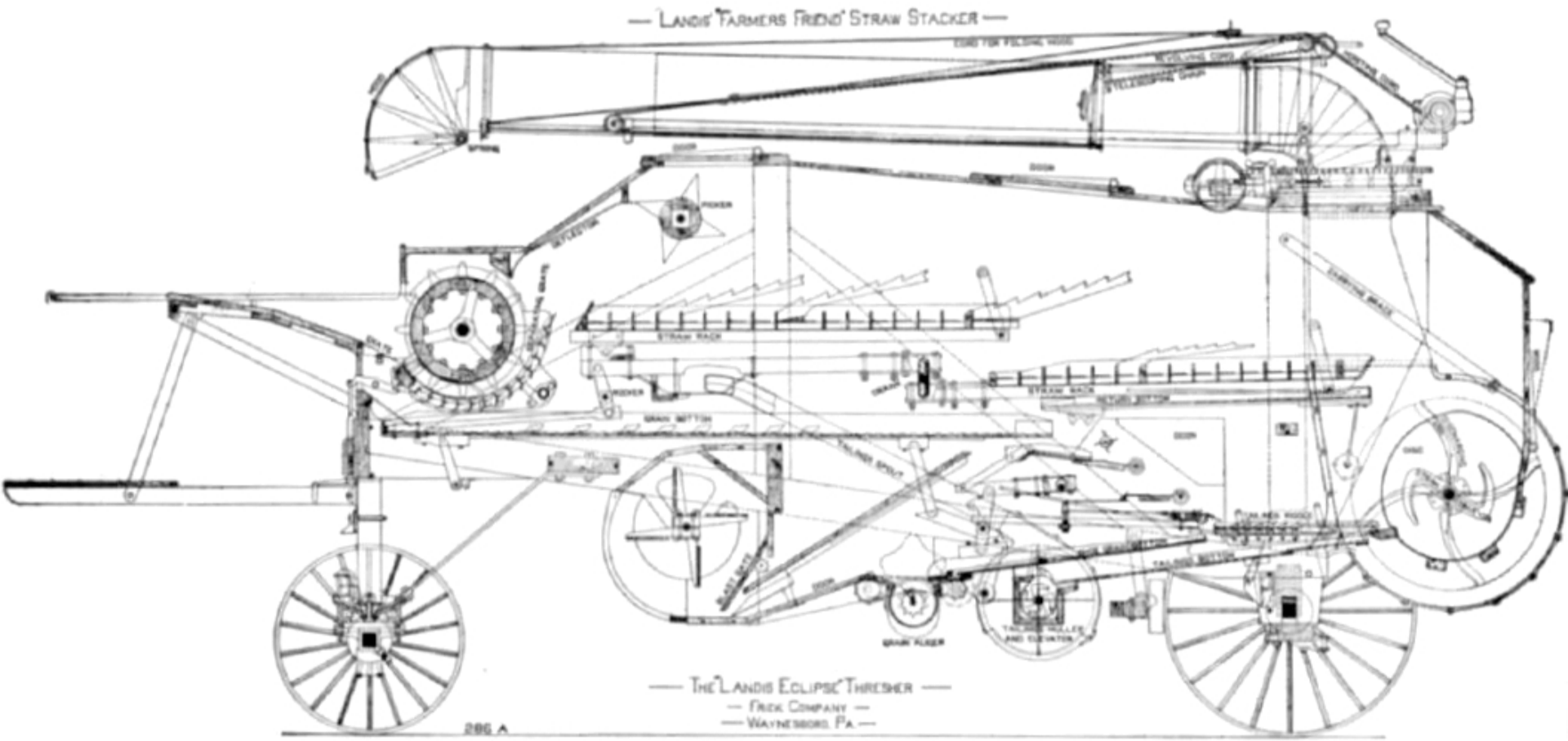
The "Landis Eclipse" closed cylinder has to-day no equal for the following qualities: strength and durability, fewness of parts, clean threshing, light running, steady and uniform motion, no dusting, no returning or back lashing.

Thresher cylinders are now almost universally constructed with a series of bars around a number of heads which are keyed to the shaft. These bars are secured to the heads by the shrinking of bands around them, which are never uniform in their tension, therefore, one band will be affected more than another when the cylinder receives a heavy jar from any cause, and the cylinder will thus be thrown out of balance.

The "Landis Eclipse" cylinder does not in any way depend upon shrinking of bands to secure its parts.

The outer surface of the "*Eclipse*" cylinder is a tube constructed of ¼-inch steel which is accurately punched to receive teeth. The ends of this tube are turned exactly true one with the other, and these turned ends of the cylinder tube fit into turned grooves in the inner side of the heads. These grooves are turned while the heads are keyed to the shaft, making them perfectly true with the shaft. When the cylinder, or steel tube, is placed between the heads and they are secured to the shaft, all parts are united in a normal condition without any strains or tensions such as are produced by the shrinking of bands, and the cylinder will not be affected by jars or shocks, so that if it is once balanced it will remain so.

The inside of the cylinder tube is lined with 12 heavy hardwood staves. Each of these staves receives a row of cylinder teeth which are supported, first, by the steel tube or shell, then through the hardwood staves and plates of metal on the inside of the staves, and secured with nuts, making the best support for the teeth, one that rarely requires any tightening; but, when necessary, this is easily done by a special wrench, through the openings in the ends of the cylin-



The "Landis Eclipse" Thresher—Sectional View

der, which are easily opened and closed by removable covers. These covers prevent the accumulation of dust and moisture on the inside of the cylinder, which often causes a cylinder to become unbalanced. However, the most troublesome cause of a cylinder becoming unbalanced is the unequal strains brought upon it by the shrinking on of the bands in being built, which is all avoided in our new construction of cylinder.

No argument is necessary to convince anyone that the "*Eclipse*" cylinder is stronger than those of the universal construction, which are only supported by three, four or possibly five shrunk bands. These bands must not only hold the cylinder from flying to pieces, but must, in addition, hold the heavy strains produced by shrinking. It is well known and understood that the strength of threshing cylinders, as universally constructed, is not greater than their weakest band, or like "a chain is no stronger than its weakest link."

The construction of the "Landis Eclipse" cylinder gives its greatest weight immediately on the surface where most effectual. On account of its outer surface being a continuous smooth surface, there is no possibility of the cylinder taking or drawing in more straw than that taken by the cylinder teeth. Therefore, it is impossible to quickly slug the cylinder or throw off the main belt, even when fed with uncut bundles of grain regardless of the condition of the straw. The "*Landis Eclipse*" cylinder is dustless when compared with any open or bar cylinder, notwithstanding the prevailing idea that closed cylinders are more dusty.

We again say that this cylinder is not only much superior in construction, but as a thresher, in quantity and quality and minimum of power required, it cannot be equaled by any construction of the open or bar type of cylinder.

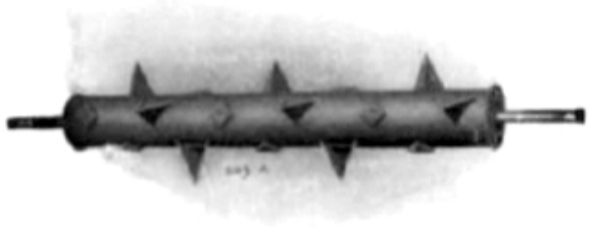
THE CYLINDER TEETH. The cylinder teeth have double threshing edges, and are more than twice as strong as the teeth in common use. When one edge is worn sufficiently to require a new set of teeth of common construction, turn the teeth or reverse the cylinder, bringing the unworn edges to the front, and you have the equivalent to a set of new teeth or two sets of teeth in one. The cylinder teeth are curved on the edges next to the surface of the cylinder (see cut on page 25). This curve is of great value; it prevents (without any excess of cylinder speed) the straw from hanging to the teeth at the surface of the cylinder, which is often the cause of the wrapping and returning of long straw. This curve also compels all the straw to be thrust into the path of the concave teeth, preventing heads of grain from passing between the cylinder and the outer ends of the concave teeth. The "*Landis Eclipse*" cylinder teeth thresh clean with fewer concave teeth, and less breaking of the straw and grain, than any other form of tooth.

The concaves are very easily and quickly removed, regardless of the length of time they have remained in position. The concave bearers are held by three set screws in each thresher side, which are secured by lock nuts. Close end adjustment of concaves often makes it very difficult to remove them after being in use for some time; but in the "*Landis Eclipse*," by simply dropping the concaves to their lowest position, and swinging out a guide plate (a new device which is located between the left-hand thresher side and its concave bearer), it leaves the bearers free to spread without disturbing the end adjustments. When removing the concaves, the set screws must not be moved, as that will disturb the adjustment of the concaves when they are again raised to their threshing position. This improvement in concave adjustment cannot be fully appreciated without the practical demonstration of removing all the concaves and blanks in less than one minute.

In the rear of the concaves is our improved separating grate, which is curved to a circle of a little greater diameter than the path of the ends of the cylinder teeth and extends a little above the center of the cylinder.

This grate is the major improvement in the "Landis Eclipse," so far as it relates to the separation of the grain from the straw.

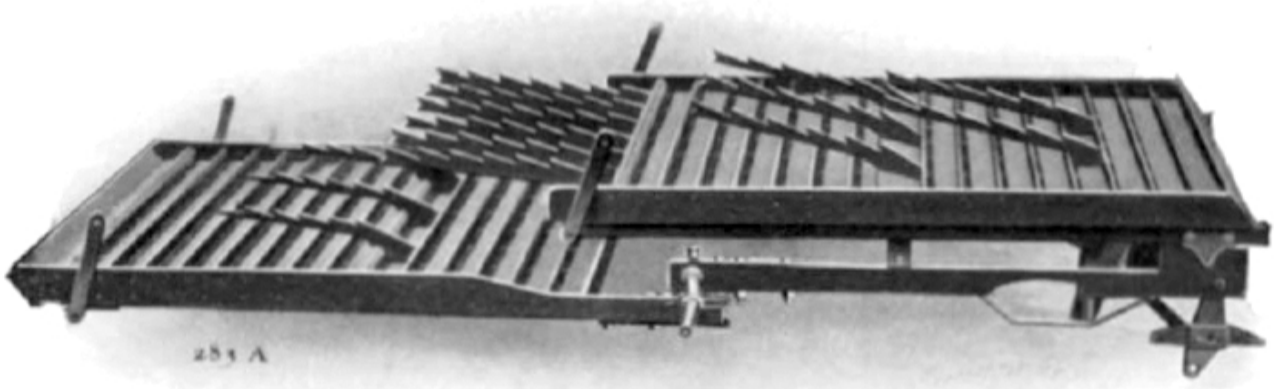
The form of this grate is such that it does not in the least interfere with the free discharge or travel of the straw over it, while the grain and chaff are violently thrust against

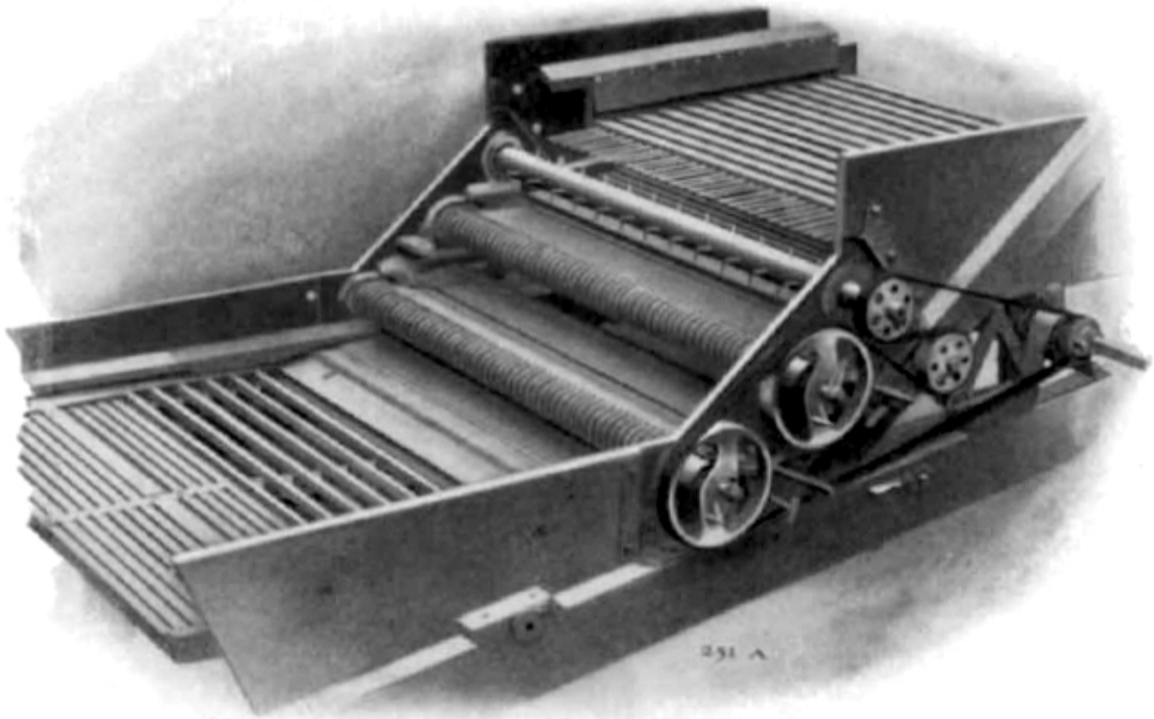


the grate and pass freely through, making the separation of grain and chaff from the straw nearly complete before the straw is checked in speed or is entirely clear of the cylinder teeth. This grate causes the straw to be discharged from the cylinder in nearly a vertical direction, and to be violently thrust against a smooth steel deflector of peculiar curve. This steel deflector is the width of the separator trunk and causes the straw to be spread to a very thin sheet the entire width of the separator. The upper end of the deflector is of such form that it causes the straw to be deflected down with very little loss of velocity, and from the time it leaves the deflector until it reaches the first straw rack it is acted upon by our (patent) non-grain throwing picker, which starts the coarse straw in a horizontal direction on to the straw bottom, and allows the short and heavy part of the stream of straw from the deflector to strike the top of straw rack with almost the same velocity it had upon leaving the cylinder, causing most of the grain not taken out by the separating grate to be separated from the straw when striking the bottom, and leaving but little to do to complete the separation. The great separating capacity of the above-described devices is why the *"Landis Eclipse"* can be built so exceedingly short, yet be a practically perfect separator. A cut on page 24 shows external view of the cylinder and our improved separating grate. The sectional view on page 26 shows the location of the cylinder, and our improved separating grate, the deflector and other parts of the machine.

FINAL SEPARATION FROM STRAW. The patent *"Landis Eclipse"* straw racks, which make the final separation of the grain from the straw, are of a much improved form over those almost universally in use. The "Eclipse" rack allows the grain and chaff to freely pass through, but not the straw. Owing to the peculiar and improved form of the surface of this straw rack, it prevents the splashing of grain, bunching of the straw and increases the speed of travel of straw over its surface from start to finish. These racks do not retard the motion of the straw, as do all straw racks which rely on "fish backs" as their holding or pulling means.

The oscillation of these straw racks produces a strong pulsating blast up and down through its openings. This pulsa-



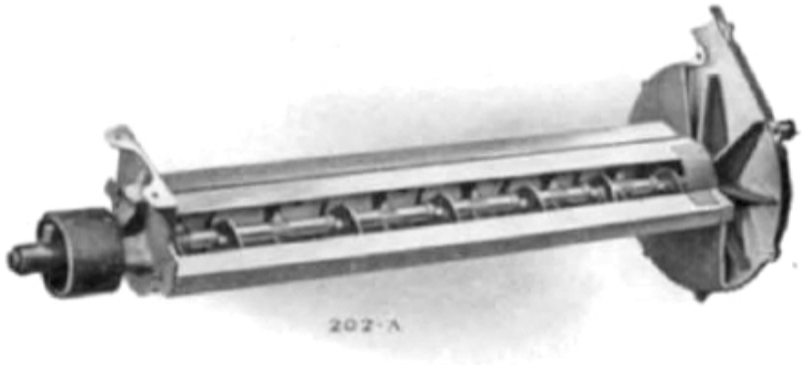


motion, which gives to the bearings and rollers a short, quick end motion. The notched bars are also connected at one end to the roller bearings, and receive the same motion as the rollers. *A convenient adjustment is provided on the outside of the machine* for adjusting the notched bars to and from the rollers, for the purpose of increasing and diminishing the space between the notched bars and the rollers, to suit the size of the grain or the amount of work to be done. This makes a cleaner that is quickly and conveniently changed while the machine is in operation, and does not require stopping of the machine to change from one kind of grain to another. The quick end motion of the rollers and notched bars gives this cleaner great capacity, with an opening of only sufficient size to let the grain pass through. This cleaner will separate all filth or foreign matter of less weight than the grain being cleaned, regardless of its size.

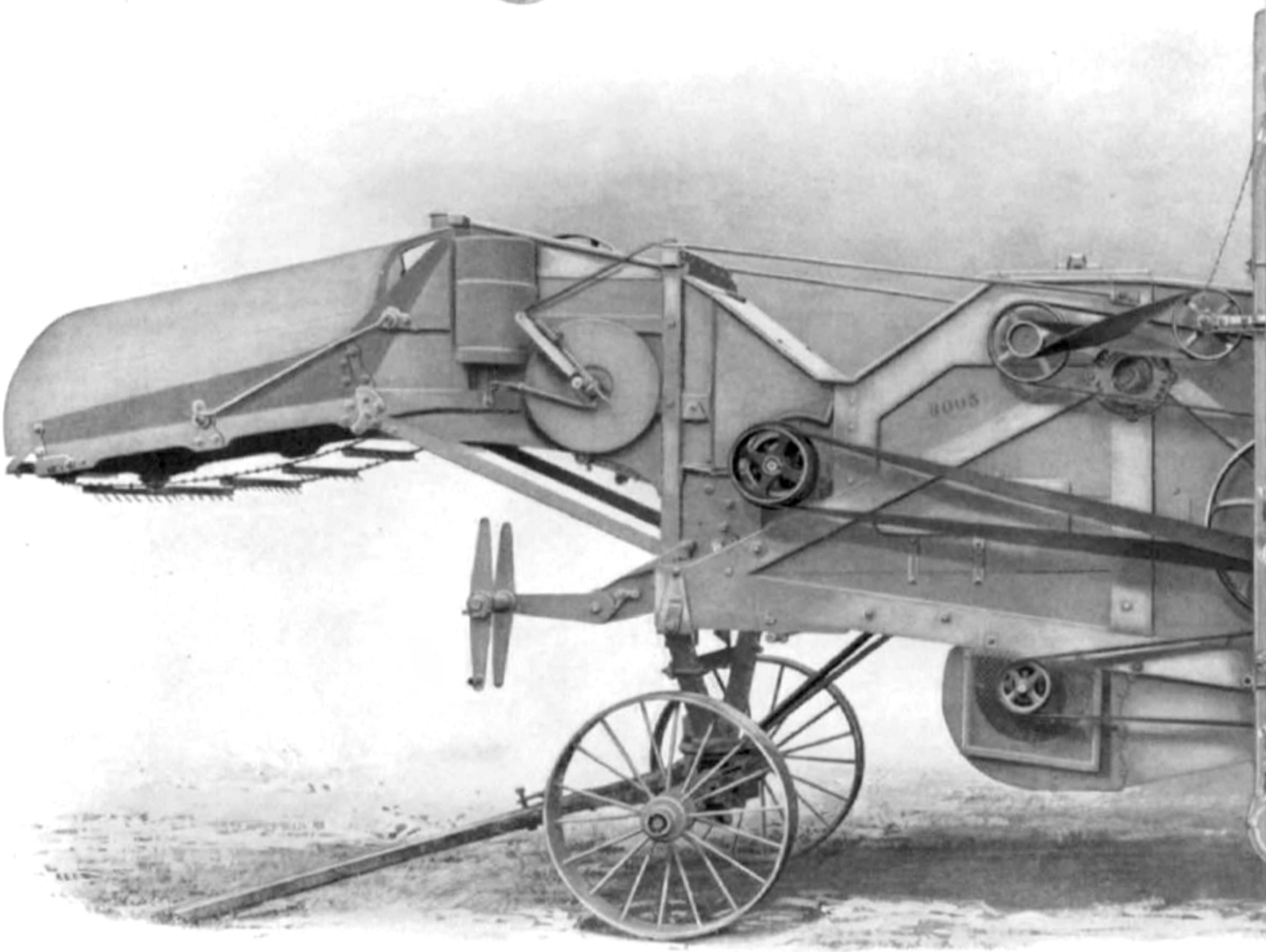
The independent adjustments of the width of shelves and opening between

ting action causes all particles of straw and chaff to change their relative positions, which is the true and only method to produce perfect separation. The sectional view, page 26, shows the position of all the parts, and the action of the straw racks and the grain bottoms which deliver the grain and chaff to the cleaner.

THE GRAIN CLEANER. A new device, possessing a number of desirable features not found in any other grain cleaner. It is composed of three shelves, one below and in advance of the other. Under and along the front edge of the upper and middle shelves are supported, on guides, thin bars about four inches wide. These bars have right-angle notches along their front edge. At the front of each of these bars is a journaled roller, having right-angle corrugated grooves of the same depth and number as the notches in the bars. The rollers revolve in bearings which are pivotally supported upon a double rock arm. This rock arm has a quick, vibrating

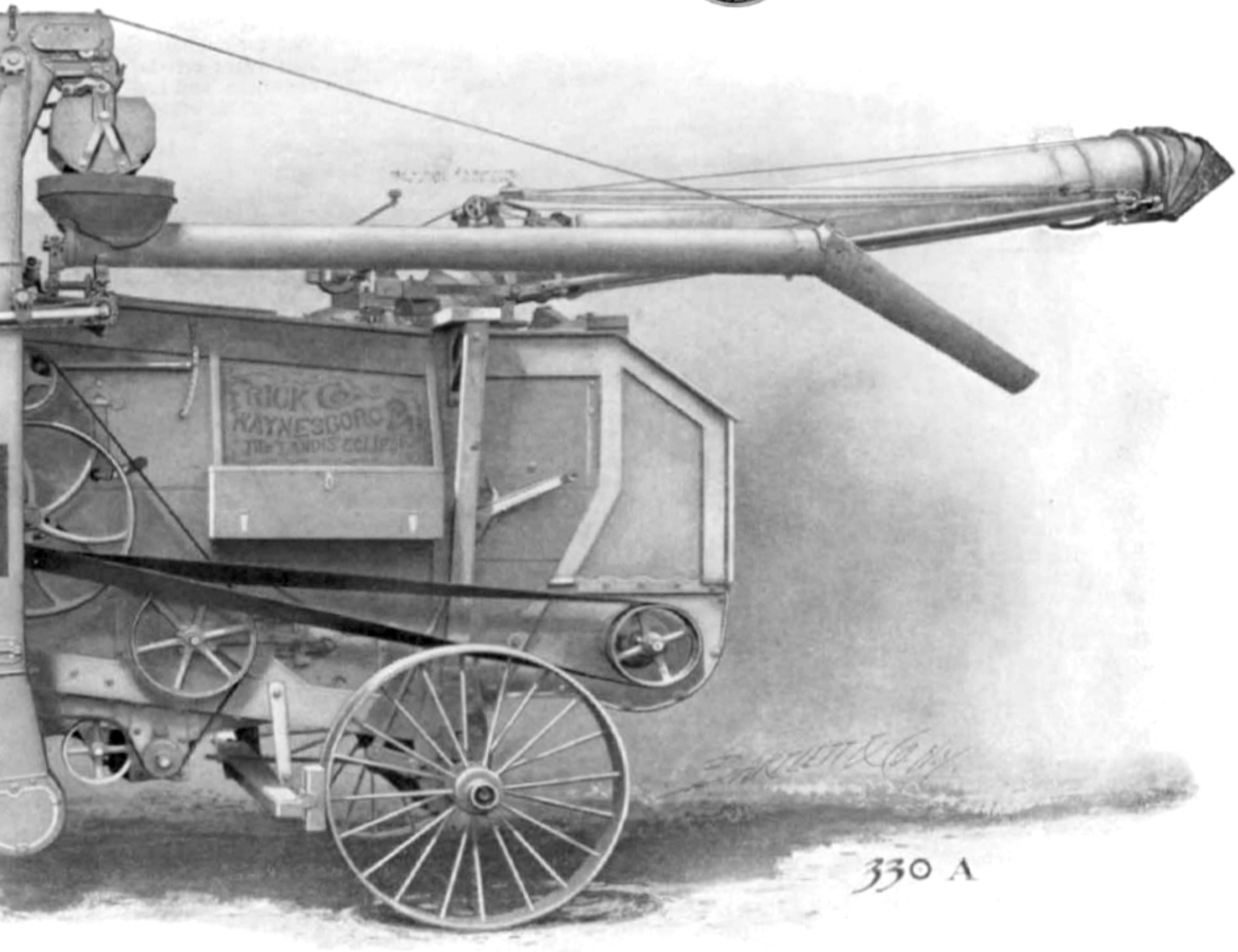


Frick Company Waynesboro, Pa.

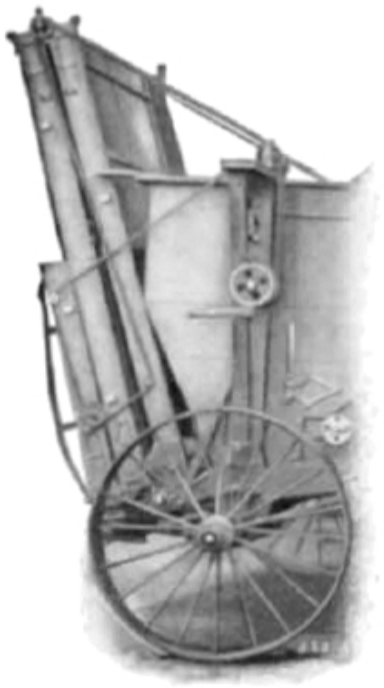


The "Landis Eclipse

Frick Company Waynesboro, Pa.



with Attachments



rollers and combs and perfect control of blast gives it great capacity and enables it to clean all kinds of grain regardless of conditions. To do perfect cleaning in timothy and flax seed, a special attachment is required, which we can furnish where such seeds are threshed.

DELIVERY TO GRAIN AND TAILINGS AUGER. The lower grain bottom is double. The upper surface receives the grain from the cleaner and delivers it into the grain auger. The lower surface extends to the rear of cleaner a sufficient distance to receive all the tailings, and carries them in the same direction, delivering them into the tailings auger below the grain bottom (see sectional view of thresher on page 26).

THE GRAIN AUGER. The grain auger driving device is of a very simple, compact and durable construction, and is positive in its action. The motion of the auger is quickly and easily reversed by placing the drive chain on top or bottom of a sprocket wheel on grain auger shaft, so as to deliver the grain on either side of the machine.

THE HULLER AND CENTRIFUGAL ELEVATOR. Our (patent) tailings huller and centrifugal elevator is a new device. To one end of our (patent) tailings conveyor is secured a small huller fan wheel, which is enclosed in a neat and small case with outlet at top, to which is attached a short round pipe. This pipe is curved at its upper end to deliver the hulled tailings on the first grain bottom. *A switch-out valve* in the bottom of huller case is provided for delivering the tailings on the ground, if desired. This valve can be opened and closed while the machine is in operation, and is a very desirable improvement when finishing a job of threshing, as when the tailings are worthless. *This centrifugal elevator*, we believe, has some advantages over the old methods. It is of much less weight and bulk. It does not interfere with feeding the machine. It prevents breaking of the grain that may be carried with the tailings. *It avoids all danger of elevating iron into cylinder*, such as bolts, nuts, or small tools that may happen to get into the machine. It is much simpler, much less liable to break, and less expensive to maintain; its operation must be seen to be fully appreciated. See cut on page 29 which shows its construction. The location and method of attaching the tailings elevator and centrifugal huller are clearly shown in left side view of thresher, page 37. The sectional view, page 26, shows some of its details.

THE CLEANER FAN. The cleaner fan is encased in a drum under the machine. The drum is in two parts. One-half is hinged at its top edge, so that it can be swung back, giving easy access to the fan. The outlet from the fan is provided with blast regulator, so as to vary the pressure of the blast for all kinds and conditions of grain and seeds to be cleaned. The sectional view, page 26, shows clearly location and details of the fan construction.

BEARINGS. All bearings in the machine are self-adjusting, which gives a full bearing to all journals, reducing friction and wear, and are all thoroughly provided for oiling. The sizes or proportions of bearings are larger for the duty or work required than are found in any machinery of same class, and will give the best results, reducing the wear and cost of repairs to a minimum.

THE TRUCK. The truck is all iron. Front axle can be turned a complete circle, so that the tongue can be passed under the machine. The rear axle supports the machine on steel springs, relieving the machine of all strains and heavy shocks when hauled over rough roads, a great protection to all parts, reducing wear and tear in a general way.

The "Landis Farmers' Friend" Straw Stacker

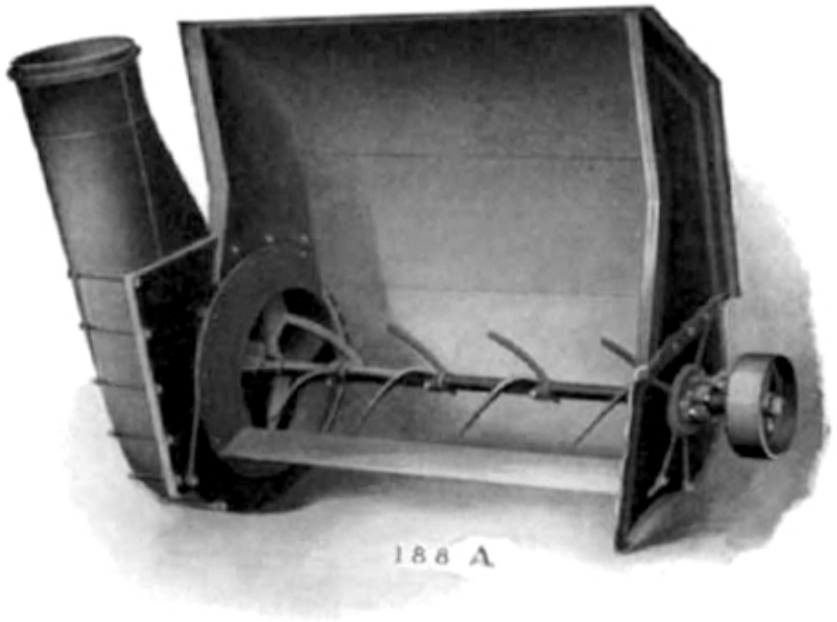
TO the rear of the machine is attached, in a substantial manner, the "*Landis Farmers' Friend*" Straw Stacker.

The straw and chaff from the machine drop into a straw drum, the length of which equals the width of the machine.

In this drum are a series of revolving spiral fingers, which are smooth on their faces, and which take the straw, in a very gentle manner, while it is falling from the straw rack, and at a slightly increased rate of speed, and give it a spiral and gradually increasing revolving motion on its way to the inlet of the stacker fan. These peculiar patent spiral fingers deliver the straw into the fan in a thin and even, revolving or whirling body or stream, moving in the same direction as the wings of the fan, which then force it up through the straw pipe without a straw breaking stroke of the fan or abrupt change of direction in its course. In all pneumatic straw stackers in which the straw is delivered from the straw racks directly into the fan, the course of the straw is abruptly changed and its velocity suddenly increased, which causes it to be badly broken. This is completely obviated by our new patent method of delivering the straw into the fan.

We believe we can consistently compare our method of introducing the straw into the fan to a person stepping from one railroad train to another while the two are running rapidly at about the same speed; and the common method, to one attempting to board such train from a stationary platform.

The "Landis" patent fan wheel for pneumatic straw stacker is entirely closed on the opposite side from which the straw enters. This construction prevents any of the blast, which has already passed through the fan, from again returning to its center, as it does (with a consequent loss of power) in fans not having such closed side. On the inner side of the fan case, and around its inlet, is a narrow rim; the side edges of the tips of the fan wings may work as close as possible to it without absolutely touching it, thus leaving a very small opening for any of the blast which has already passed through the fan to return again to the center of the fan at its inlet side.



Centrifugal Stacker—Inside View

We are able to run the fan so close to the rim because we give an end play to the fan shaft, which allows the fan to recede from the rim when any bunches of straw happen to get outside of the front edges of the fan wings. When this happens, the fan recedes from the narrow rim and permits the bunch to pass through, and the air pressure between the fan case and the closed end of the fan immediately forces the fan back to the rim. This construction, it will be observed, utilizes practically all of the blast generated by the fan, to expel the straw, and thus economizes power, instead of allowing much of the blast and straw to return to the center of the fan

to be again expelled, as is the case in pneumatic straw stackers of the common construction.

The above favorable methods of conveying the straw from separator to stacker fan, and the reducing of friction and loss of power, make it impossible, while all parts are running at working speed, to choke the "*Landis*" stacker while feeding the thresher to its maximum capacity. The stacker can be run with a 2-inch belt, but for strength and durability a wider belt is used.

The straw pipe can be telescoped half its length, and is oscillated automatically any number of degrees at any part of a circle. The automatic device can conveniently and quickly be disconnected, the pipe be swung by hand to any other position and again connected to the automatic device, and will give the pipe the same automatic movement without any changes. The automatic device can be stopped and started at any point, and reversed at any point, without disturbing or changing the adjustment of automatic device.

The straw pipe automatically stops a few seconds before reversing at each end of stack—a great advantage, as it keeps the ends of stack the same height. The swinging of the pipe can be stopped at any point without disturbing or stopping automatic device.

At the end of the telescoping pipe is a deflecting nozzle which directs the straw in any desired direction from a straight line to more than a right angle. The telescoping pipe is revolvable a little more than a full revolution, so that the straw can be thrown at any angle of a circle around the axis of the pipe, making the straw pipe perfectly adapted for packing the straw in every nook or corner of a barn, as well as building as large, if not a larger, straw stack than was ever built without removing the machine, as the stacker will throw the straw forty or more feet from the end of pipe; and will build a stack that will shed water much better than can be built by hand, as the straw can as easily be discharged from the end of the pipe in a vertical direction as any other, which enables the manipulation of the pipe so that the straw will leave it in a vertical direction and fall by gravity on top of the stack, a condition absolutely required to make a most perfect top, one that will shed water, as a thatched roof, and to do it without a man on the stack, a great saving of expense and avoiding much unpleasant work.

The "*Landis*" straw pipe for 1907 is very light and durable, constructed of steel and malleable iron. The telescoping section is supported at all points of extension by the lifting cords themselves. These cords are also the medium for telescoping the pipe. The telescoping pipe is not supported by wheels on tracks, which are subject to heavy strains and produce great friction when the pipe is extended to its full length. All wheel and track devices require much greater strength and weight, as the binding strains when the pipe is extended full length are very severe, and make it hard to operate the telescoping section.

The "*Landis*" telescoping device, with its peculiarities, works just as easily under all conditions at its full extension as at the starting point. The telescoping pipe section can be extended its full length, no greater lap being required at the outer end of fixed pipe and inner end of telescoping pipe than is sufficient to prevent the ends dropping apart.

IN CONCLUSION. The foregoing general description, in connection with the cuts, we hope will give a fair idea of the construction and operation of the "*Landis Eclipse.*" Many novel features or details have not been referred to. The aim has been to make all parts convenient of access and arranged for quick adjustment, points which will be greatly appreciated by all threshmen.

It is confidently believed that this machinery is all that is claimed for it, and consequently you cannot afford to purchase a threshing machine or wind straw stacker until you have examined the "*Landis Eclipse.*" If you cannot arrange to see it, write and any further information desired will be gladly given.

SIZES

For the 1907 season we offer the following sizes:

LIGHT, OR JUNIOR, "ECLIPSE" THRESHER

22-inch cylinder by 38-inch separator, with 15-foot straw carrier
26-inch cylinder by 42-inch separator, with 15-foot straw carrier

"LANDIS ECLIPSE" THRESHER

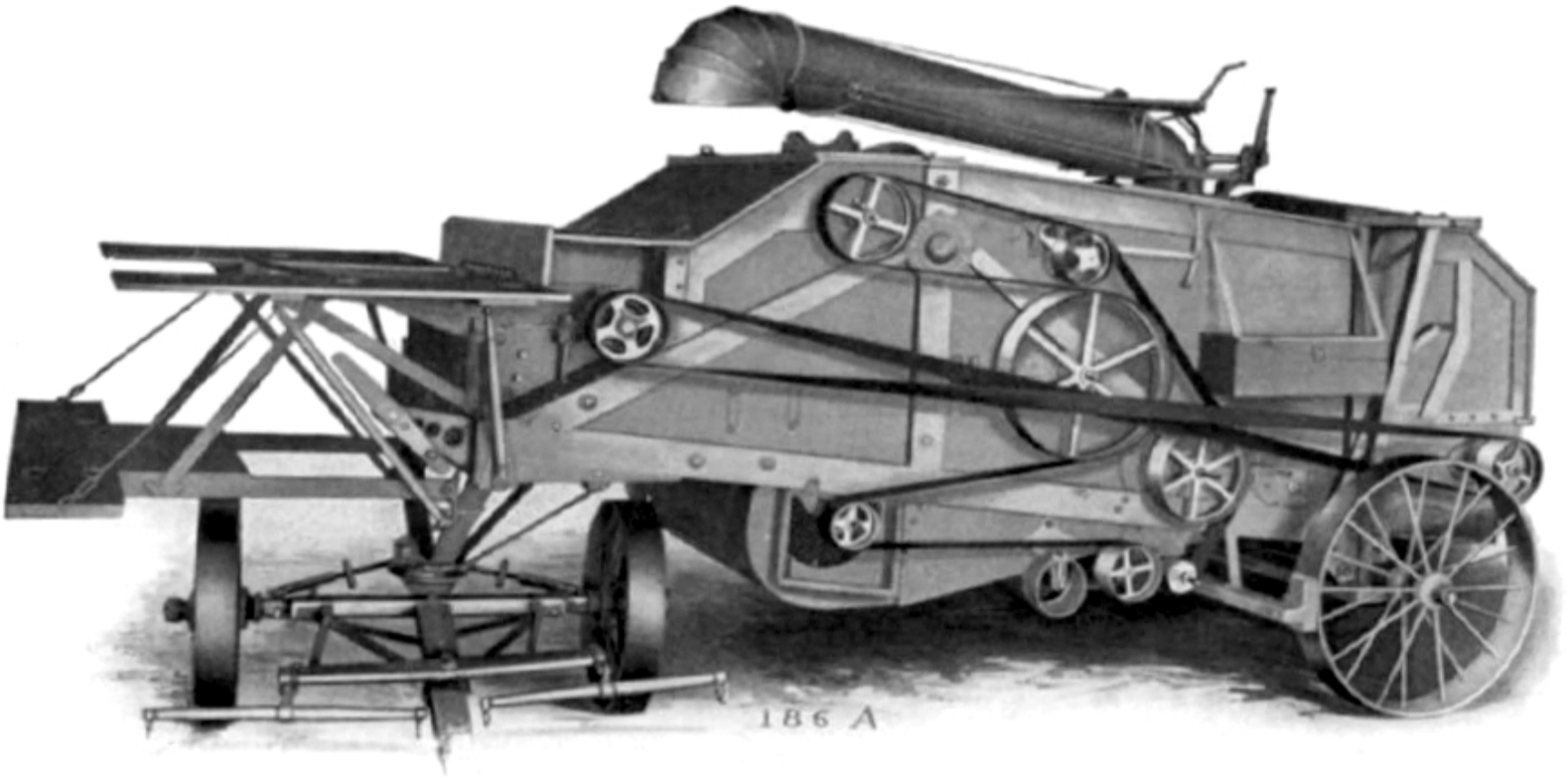
27-inch cylinder by 42-inch separator, with 16-foot straw carrier
30-inch cylinder by 52-inch separator, with 20-foot straw carrier
32-inch cylinder by 52-inch separator, with 20-foot straw carrier
32-inch cylinder by 58-inch separator, with 20-foot straw carrier
36-inch cylinder by 58-inch separator, with 20-foot straw carrier
36-inch cylinder by 62-inch separator, with 20-foot straw carrier
40-inch cylinder by 62-inch separator, with 20-foot straw carrier

ANY length of folding straw carrier will be furnished that is desired, but greater lengths than specified above are not carried in stock, and when wanted an extra charge will be made for such extra length.

We also furnish the following attachments at extra charges:

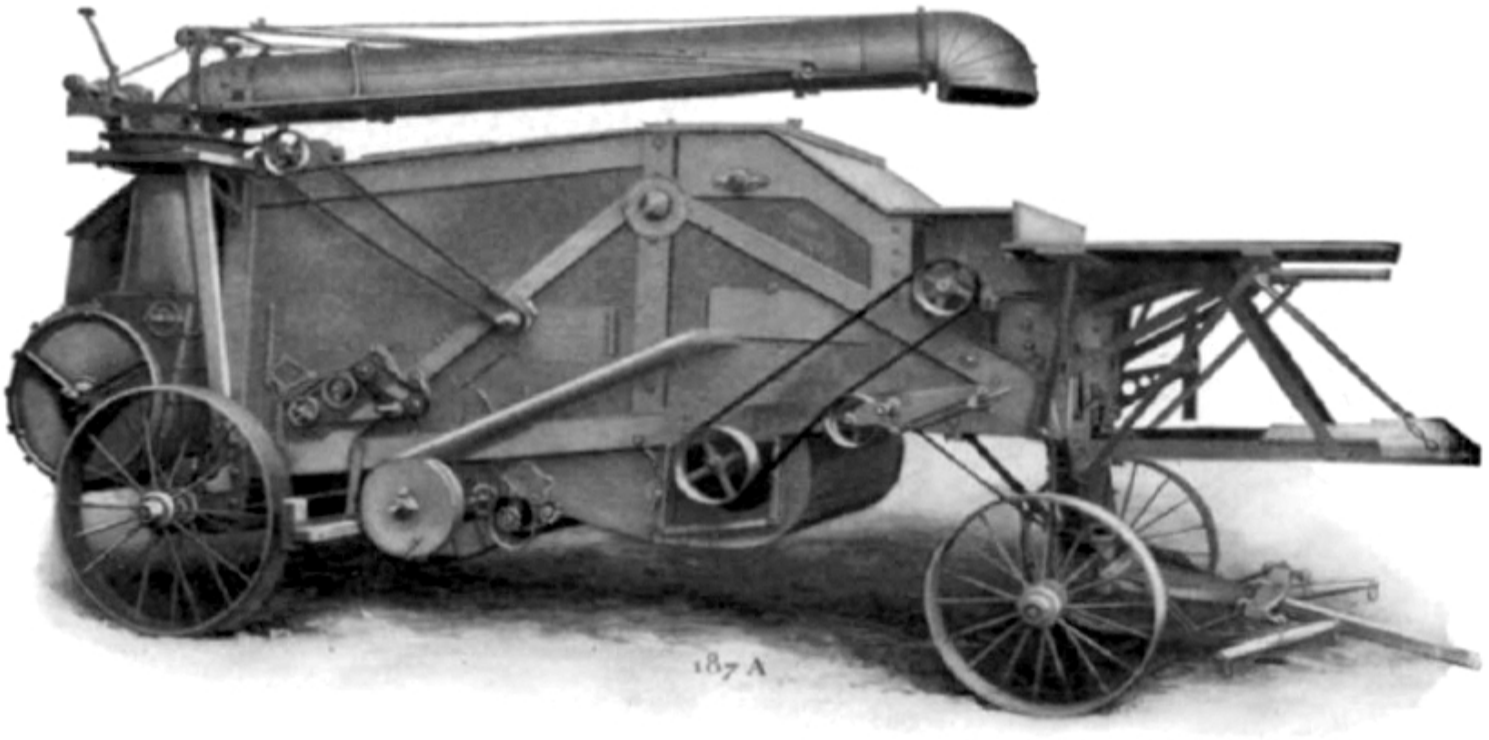
Baggers, with tallying attachment; weighers, with bagger; weighers, with conveyor and bagger; wagon loaders, plain; wagon loaders, with weigher; Nesmith grain registers; Miller grain registers; dust collectors; Avalanche pneumatic grain elevators and weighers; Sattley attached stackers; canvas covers for threshers, and band cutters and self-feeders.

The "Landis Eclipse" Thresher



The "Landis Eclipse" Thresher—Right Side

Showing belts in position.

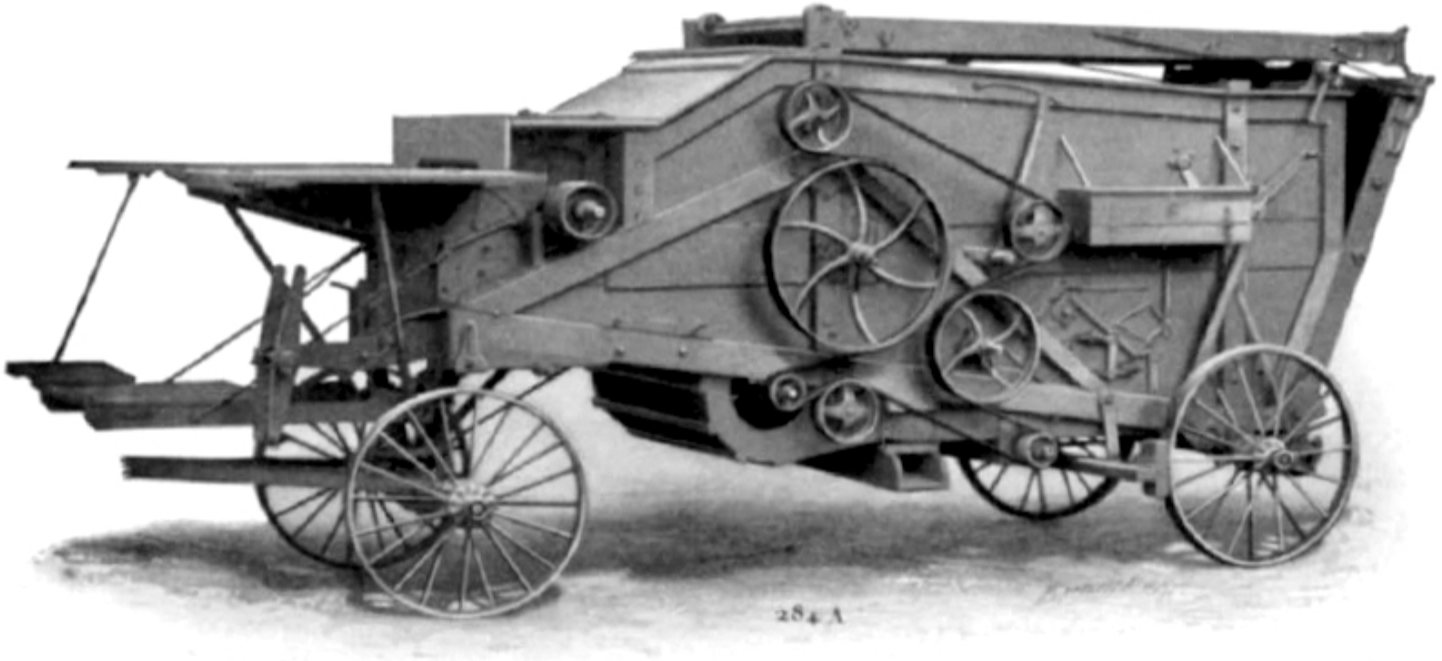


The "Landis Eclipse" Thresher—Left Side

The Tailings Huller and Centrifugal Elevator are shown in front of the rear truck wheel.

Frick Company Waynesboro, Pa.

Something You Want and Just What You Have Been Looking For



The Light "Eclipse" Thresher—Right Side View

SOLID CYLINDER. Cleaner threshing; lighter running; strongest construction, will remain balanced.

CYLINDER TEETH. Double edged; double strength; double wear.

CELL STRAW RACKS. No slippage of straw; no bunching; perfect separation.

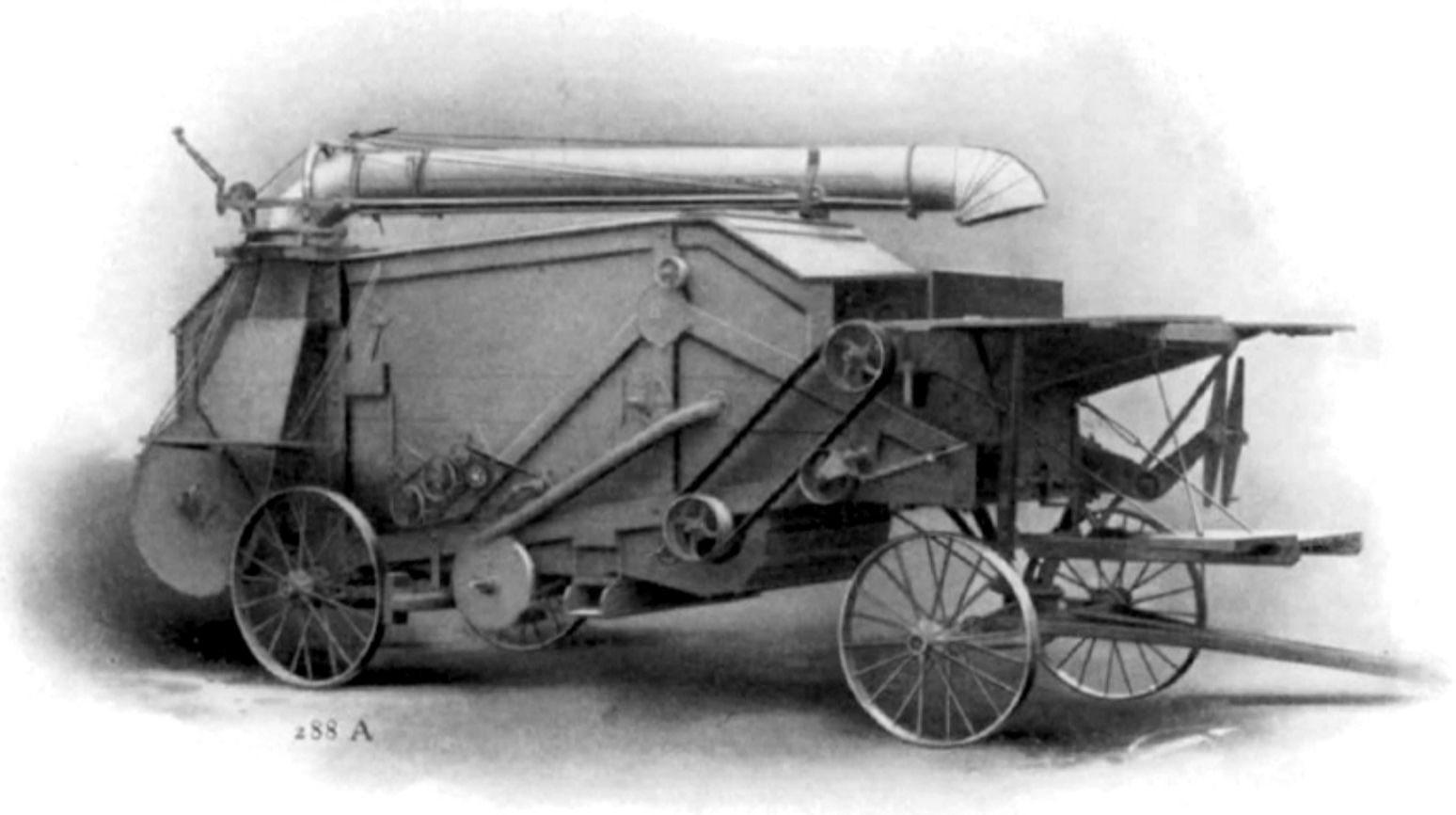
GRAVITY CLEANER. No sieves; no clogging; perfect cleaning; adjustable for all kinds and conditions of grain.

TRUSS FRAME. Cross braced; no mortises; no tenons; no vibration of machine; separating parts balanced.

The machines are of light pattern and well suited for hilly and mountainous country where heavier machines cannot well be used. The design of these machines is very similar to that of the standard "Landis Eclipse" Thresher, described in the preceding pages, and nothing has been sacrificed to make them first-class, light, durable threshers with ample capacity for the small amount of power required to run them.

The quality and quantity of work done by these machines has been a surprise to many of our friends. Having adequate capacity for its light weight, it makes it a very desirable machine for threshing small crops which require frequent moving. Being light, it can be easily moved from place to place with horses over roads where it would be difficult to handle a traction engine.

This light machine we believe to be far in the lead of anything of its kind in the market, and should you be in need of a light, serviceable and simple thresher with great capacity for doing clean work, you cannot afford to pass this one by.



The Light "Eclipse" Thresher—Left Side View

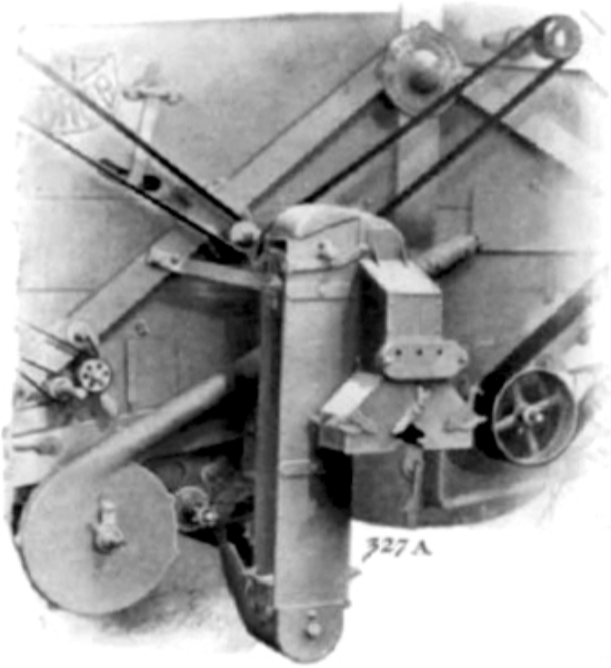
These threshers have all the special features of the standard "Landis Eclipse" Thresher—Solid Cylinder with large heavy teeth, Improved Separating Grate, Concave Adjustment with special features, patent Centrifugal Tailings Huller and Elevator, comb and roller Gravity Cleaner, oscillating cell straw rack which is made in one section. Patent Picker over straw rack, and all shaft boxes self-aligning.

This Light Thresher does not have supporting jacks on front axle nor springs on rear axle.

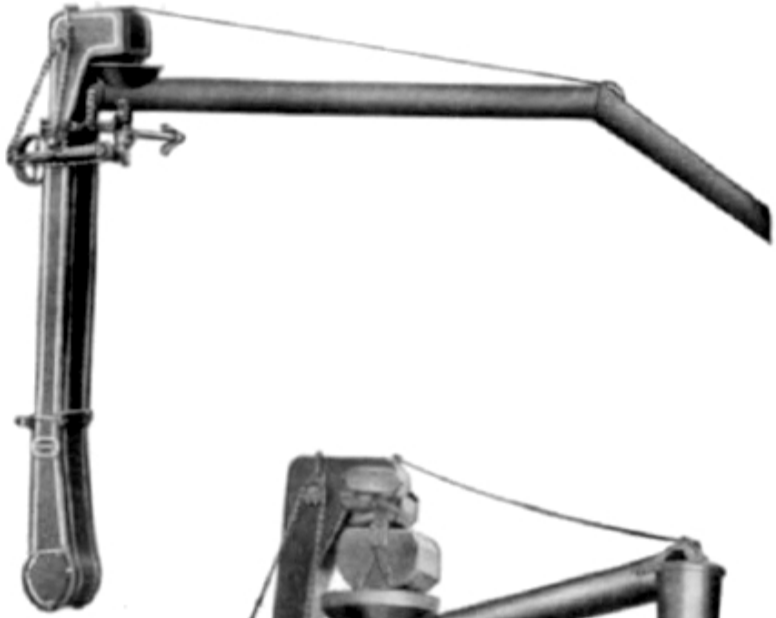
The Grain Spout is of the shaker pattern instead of grain auger as in our standard machine.

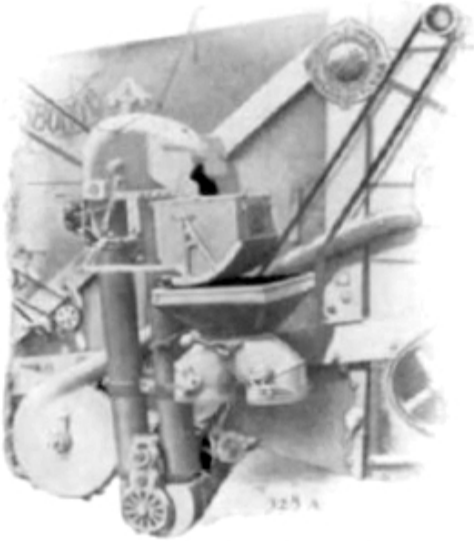
The straw Rack is all in one section, from front to rear, instead of two sections as in our standard threshers.

The Wind Stacker is essentially the same as on our standard machine, except that it does not have an automatic oscillating device.

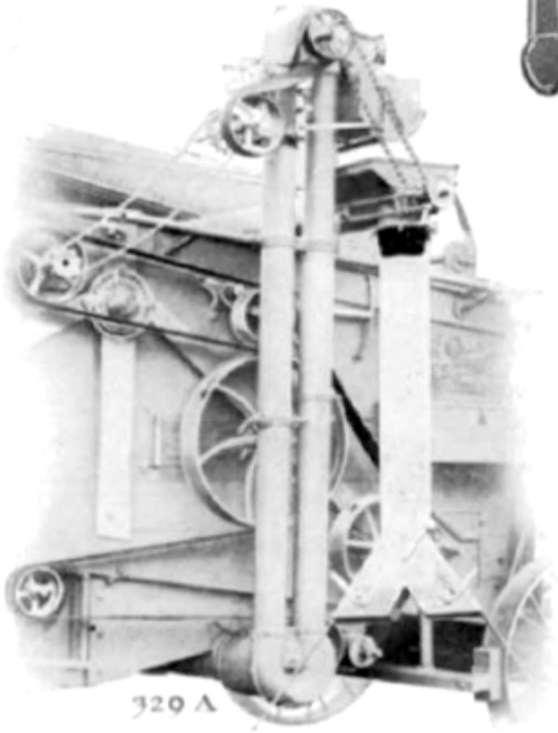


"Eclipse"
Tallying Bagger
attached to
Frick Thresher





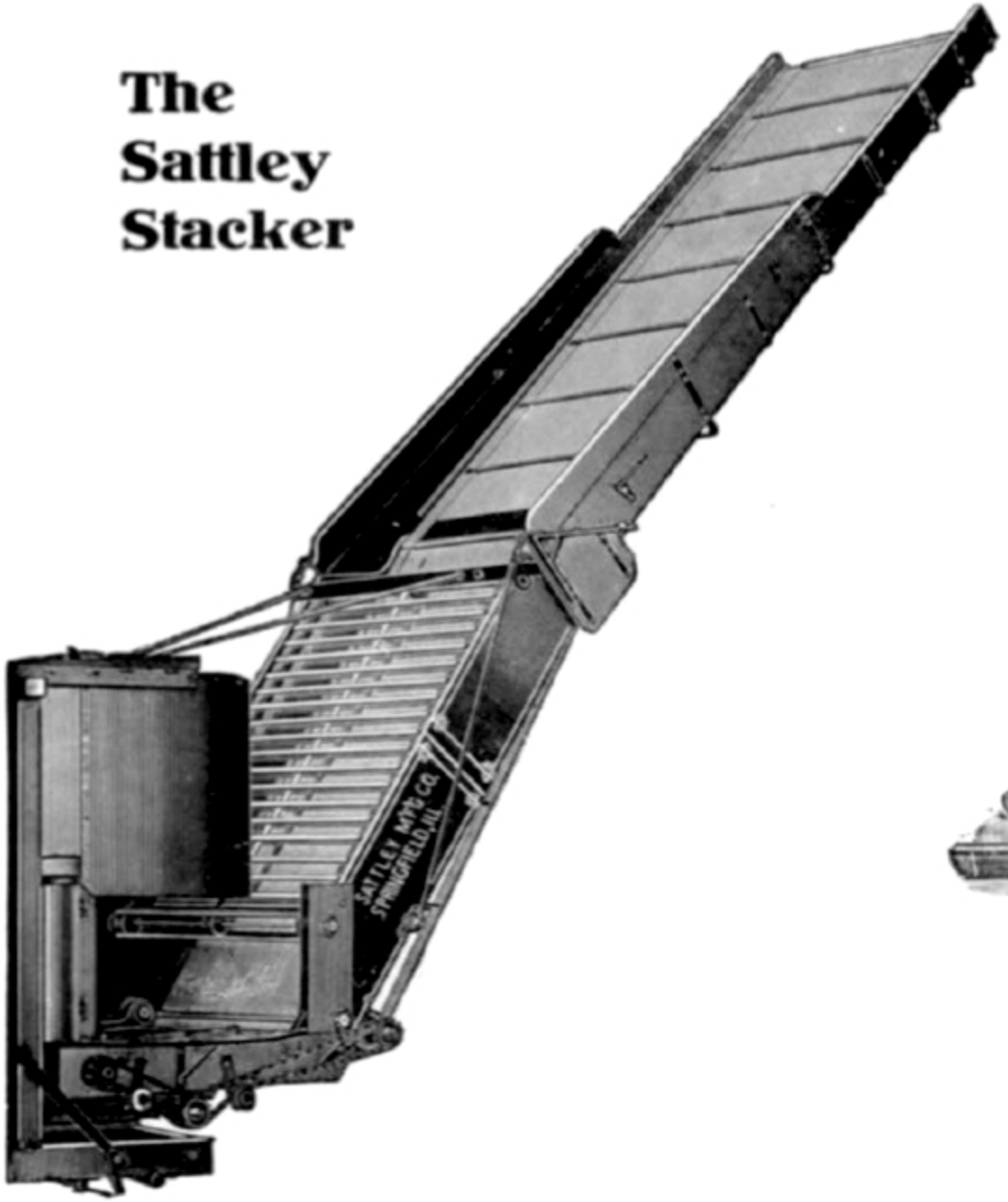
Short Weighing Bagger

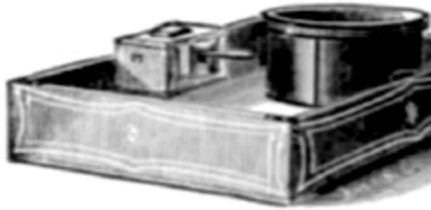


Weigher with Conveyor across Machine

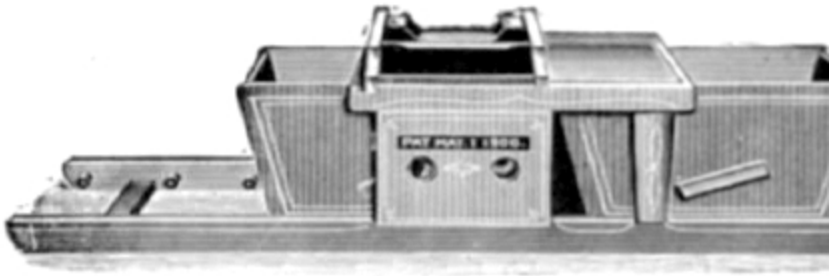
Weigher and Loader with Swinging Conveyors

The Sattley Stacker





Nesmith Grain Regist



Miller Grain Measurer and Register

Gold Medal awarded "Landis Eclipse" Threshers, Louisiana Purchase Exposition

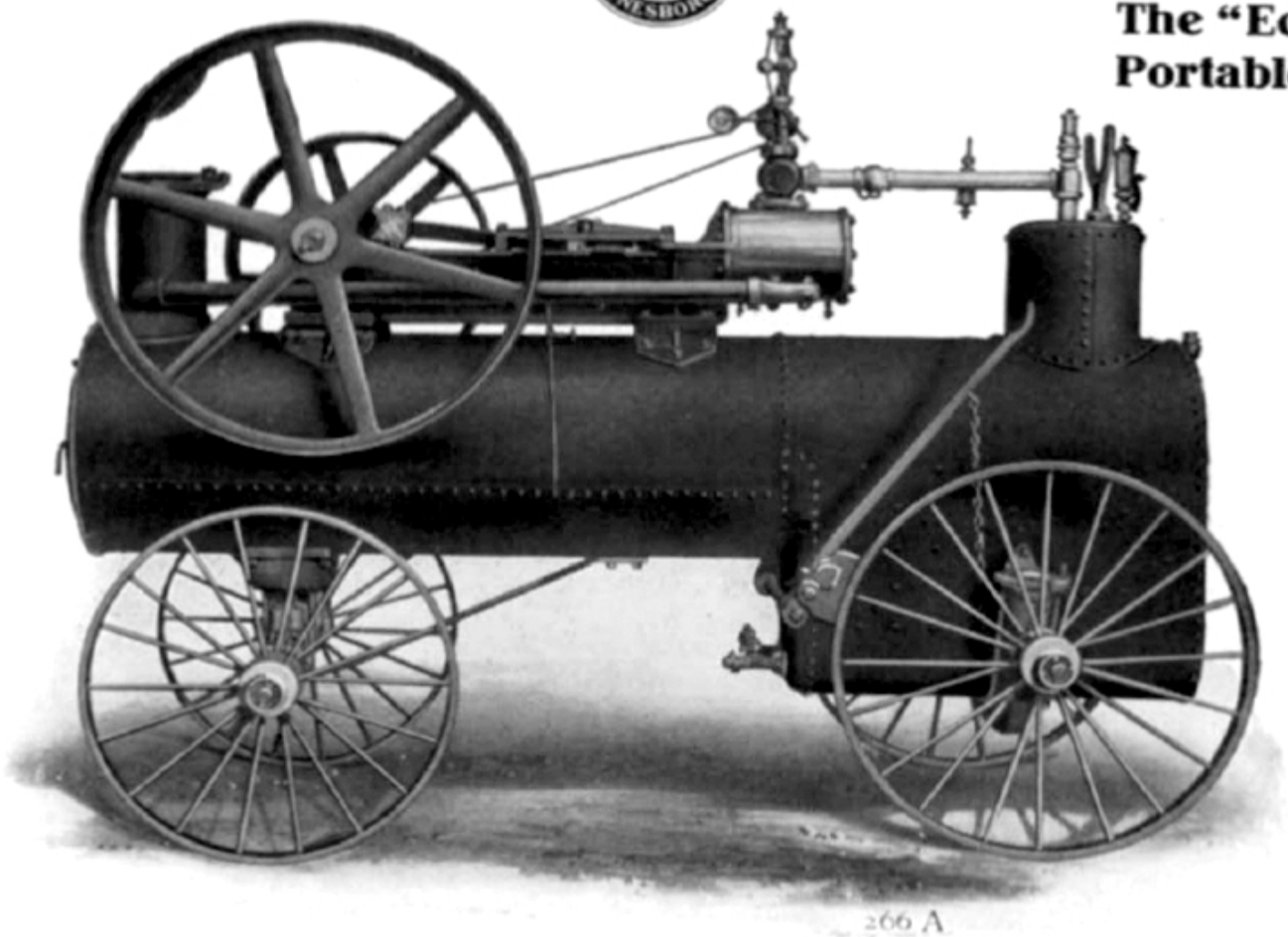
Partial List of Awards to Frick Company for their Machinery

Where Exhibited	Premiums	Machinery Exhibited
Cincinnati Industrial Exhibition, 1874.	1st Prize Medal.	Portable Farm Engine
Maryland State Fair, Baltimore, 1874, '75, '77 and '81	First Premium.	Portable Engine.
Delaware State Fair, Middletown, 1875	First Premium.	Portable Engine.
Pennsylvania State Fair, Lancaster, 1875	First Premium.	Portable Engine.
Centennial Exhibition, Philadelphia, 1876	First Premium.	Portable "Eclipse" Farm Engine.
Centennial Exhibition, Phila., 1876	First Premium.	Stationary Engine.
South Carolina State Fair, Columbia, 1877	First Premium.	Portable Engine.
Maryland State Fair, Westminster, 1877	First Premium.	Portable Engine.
Georgia State Fair, Atlanta, 1877	Gold Medal.	Portable Engine.
Augusta County Fair, Augusta, Va., 1878	First Premium.	"Eclipse" Portable Engine.
International Cotton Exposition, Atlanta, 1881	First Premium.	Traction Engine.
International Cotton Exposition, Atlanta, 1881	First Premium.	"Eclipse" Portable Engine.
Melbourne International Exhibition, Melbourne, Australia, 1881	Gold Medal, First Premium.	Portable Engine.
South Carolina State Fair, Columbia, 1881	First Premium.	Portable Engine.
Inter-State Exposition, Charleston, S. C., 1882	Silver Medal.	Portable Engine.
St. Louis State Fair, St. Louis, 1882	$100.00, Gold.	Traction Engine.
Western National Fair Association, Bismark Grove, Kansas, 1883	First Premium.	Traction Engine and Thresher.
West Virginia State Fair, Martinsburg, 1883	3 First Premiums.	Traction and Portable Engine and Thresher
North Carolina State Fair, Raleigh, 1883	3 First Premiums.	Portable Engine and Threshers.
Mahoning and Shenango Valley Fair, Youngstown, Ohio, 1883	Gold Medal.	Traction Engines and Threshers.
Chester Fair, South Carolina, 1883	2 First Premiums.	Engines & Threshers.
York County Agricultural Fair, York, Pa., 1883	3 First Premiums.	Traction Engines and Threshers.
Union County Fair, Lewisburg, Pa., 1883	First Premium.	Traction Engine and Thresher.
Maryland State Fair, Pimlico, 1883	First Premium.	Traction Engine and Thresher.
Green County Fair, Carrollton, Ill., 1883	First Premium.	Traction Engine and Threshers.
Frederick County Fair, Frederick, Md., 1883	First Premium.	Traction Engine and Thresher.
Staunton Fair, Va., 1883	First Premium.	Traction Engine and Thresher.
Kansas State Fair, Topeka, 1883	First Premium.	Traction Engine.
Onondago County Agricultural Society, Syracuse, 1883	First Premium.	"Eclipse" Traction Engine.
Southern Exposition, Louisville, Ky., 1883	Diploma.	"Eclipse" Traction or Road Engine.
Southern Exposition, Louisville, Ky., 1883	Diploma.	Portable Saw Mill.
Cumberland County Exposition, Carlisle, Pa., 1883	First Premium.	Traction Engine and Separator.
Berkeley County Fair, Martinsburg, W. Va., 1883	First Premium.	Grain Thresher and Separator, Portable Steam Engine and Water Wagon.

Where Exhibited	Premiums	Machinery Exhibited
Armstrong County Agricultural Association, Kittanning, Pa., 1884	First Premium.	"Eclipse" Thresher.
Pennsylvania State Fair, Philadelphia, 1884	First Premium.	Stat'nary Steam Engine
Southern Exposition, Louisville, Ky., 1884	First Premium.	Farm Engines, Road Engines & Threshers
Butler Agricultural Society, Butler, Pa., 1884	First Premium.	Thresher.
Butler Agricultural Society, Butler, Pa., 1884	First Premium.	Traction Engine.
Tennessee State Fair, Nashville, Tenn., 1884	First Premium.	Thresher.
Tennessee State Fair, Nashville, Tenn., 1884	First Premium.	Steam Plow.
Tennessee State Fair, Nashville, Tenn., 1884	First Premium.	Traction or Road En.
Tennessee State Fair, Nashville, Tenn., 1884	First Premium.	Farm Engine on Wheels.
World's Industrial and Cotton Centennial Exhib'n, New Orleans, 1885	Honorable Mention	"Eclipse" Saw Mill.
World's Industrial and Cotton Centennial Exhib'n, New Orleans, 1885	Honorable Mention	Semi-Portable Engine with Adjustable Balanced Shaft and Center Crank.
Armstrong County Agricultural Association, Kittanning, Pa., 1885	First Premium.	"Eclipse" Traction Engine.
Montgomery Agricultural Society, Rockville, Md., 1886	First Premium.	Saw Mill and Traction Engine.
Onondago County Agricultural Society, Syracuse, 1887	First Premium.	"Eclipse" Traction Engine.
Onondago County Agricultural Society, 1887	First Premium.	Thresher.
Virginia State Fair, Richmond, 1888	2 First Premiums.	Traction Engine and Saw Mill.
Columbian Exposition, Chicago, 1893.	Medal.	Traction Engine.
Columbian Exposition, Chicago, 1893.	Medal.	Portable Engine.
International Exposition, Atlanta, 1895	Gold Medal.	Engines, including Traction and Portable Engines.
International Exposition, Atlanta, 1895	Gold Medal.	Saw Mill.
International Exposition, Atlanta, 1895	Grand Prize.	General Excellence of Exhibit.
International Exposition, Atlanta, 1895	Gold Medal.	Engines and Appliances.
North Carolina State Fair, Raleigh, N. C., 1895	Diploma.	Engine & Thresher.
Tennessee Centennial Exposition, Nashville, Tenn., 1897	First Premium.	Traction or Self Propelling Engine.
Tennessee Centennial Exposition, Nashville, Tenn., 1897	Bronze Medal.	Grain Thresher and Pneumatic Stacker.
National Export Exposition, Philadelphia, 1899	Silver Medal and Diploma and First Premium.	Portable Engine.
Juniata County Agricultural Society, Port Royal, Pa., 1901	Diploma.	Engine & Thresher.
Pan American Exposition, Buffalo, 1901	Silver Medal.	Traction and Portable Engine.
Pan American Exposition, Buffalo, 1901	Gold Medal.	Thresher with Wind Stacker.
World's Fair, St. Louis, Mo., 1904	Gold Medal.	Thresher.
World's Fair, St. Louis, Mo., 1904	Gold Medal.	Portable Saw Mill.

Frick Company Waynesboro, Pa.

The "Eclipse" Portable Engines



266 A

"Eclipse" Portable Engine on Wheels, without Pump and Heater or Injector
Gold Medal Awarded at the Atlanta Exposition, 1895

WE manufacture a complete line of portable engines, ranging from 4 to 40 horse power, the various styles being shown by engravings, pages 44 to 47. We furnish them either on skids or sills, or mounted on wheels, as required.

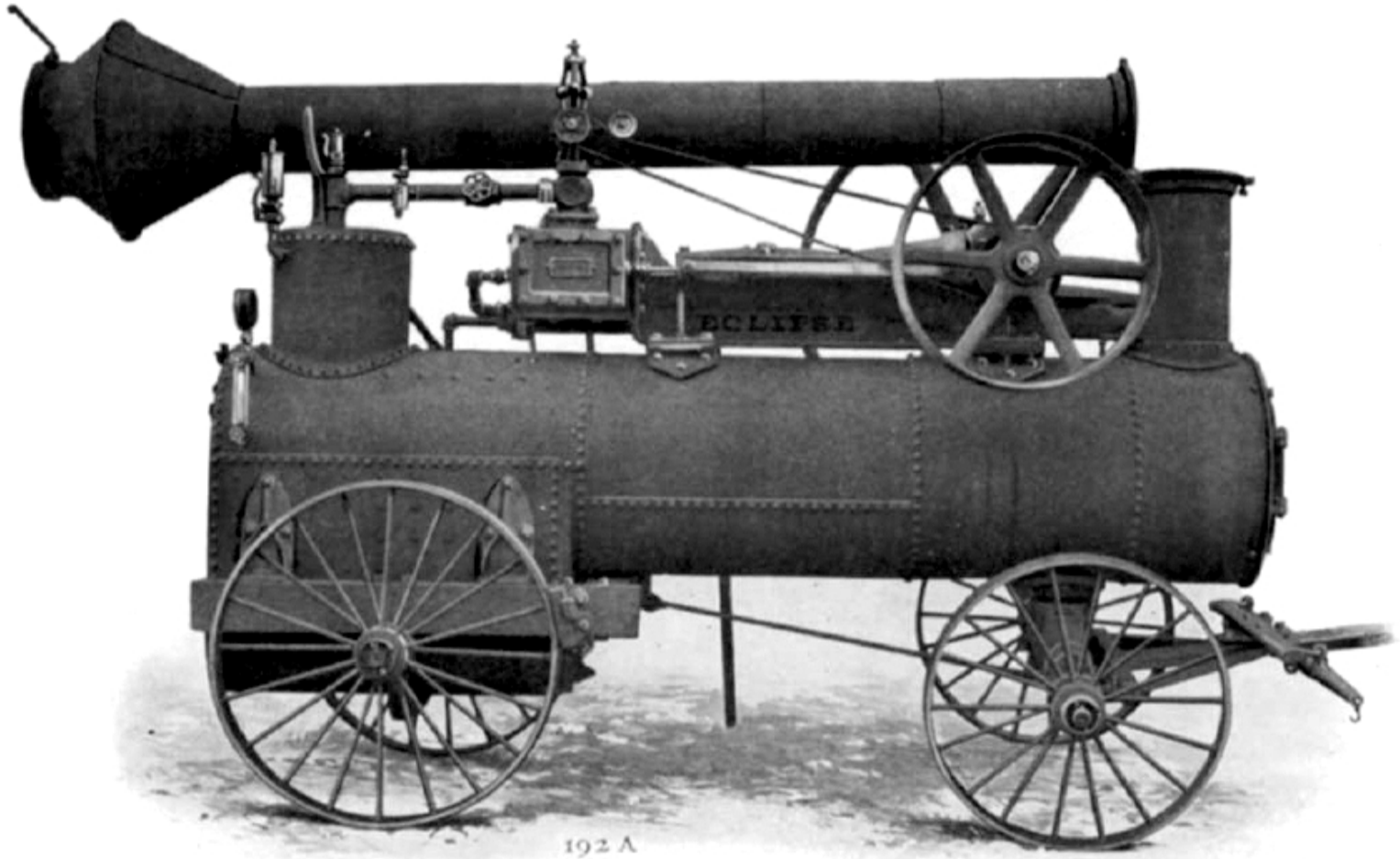
The boilers are fitted with our patented "Eclipse" Engine, and are light, simple, strong and conveniently arranged. They will give their rated horse power with great economy. Boilers are made of the best steel and of splendid workmanship, having water front and water bottom. No cast iron used in construction of boilers. When mounted upon wheels the smaller-sized portables are fitted with springs on both front and rear axles. The larger sizes are mounted by our patent method. All are provided with fixtures and fittings as per list in back part of book. Each engine is tested thoroughly before shipment.

191 A

On Wheels with Springs, 4 to 15 H. P., with Pump and Heater

THIS engine is a well-made, strong and useful machine. The traveling wheels are large and powerful, and made entirely of iron. The boiler is suspended on springs for traveling, which are let down when at work. The boiler is capacious.

There is a powerful brake on the hind wheels, very useful for staying the engine when at work. The engine is carried on top of the boiler, resting on a powerful bed plate, which is hollowed out to form a receptacle for oil leakage. This can be detached from the brackets and the engine converted into a fixed horizontal engine, if required.

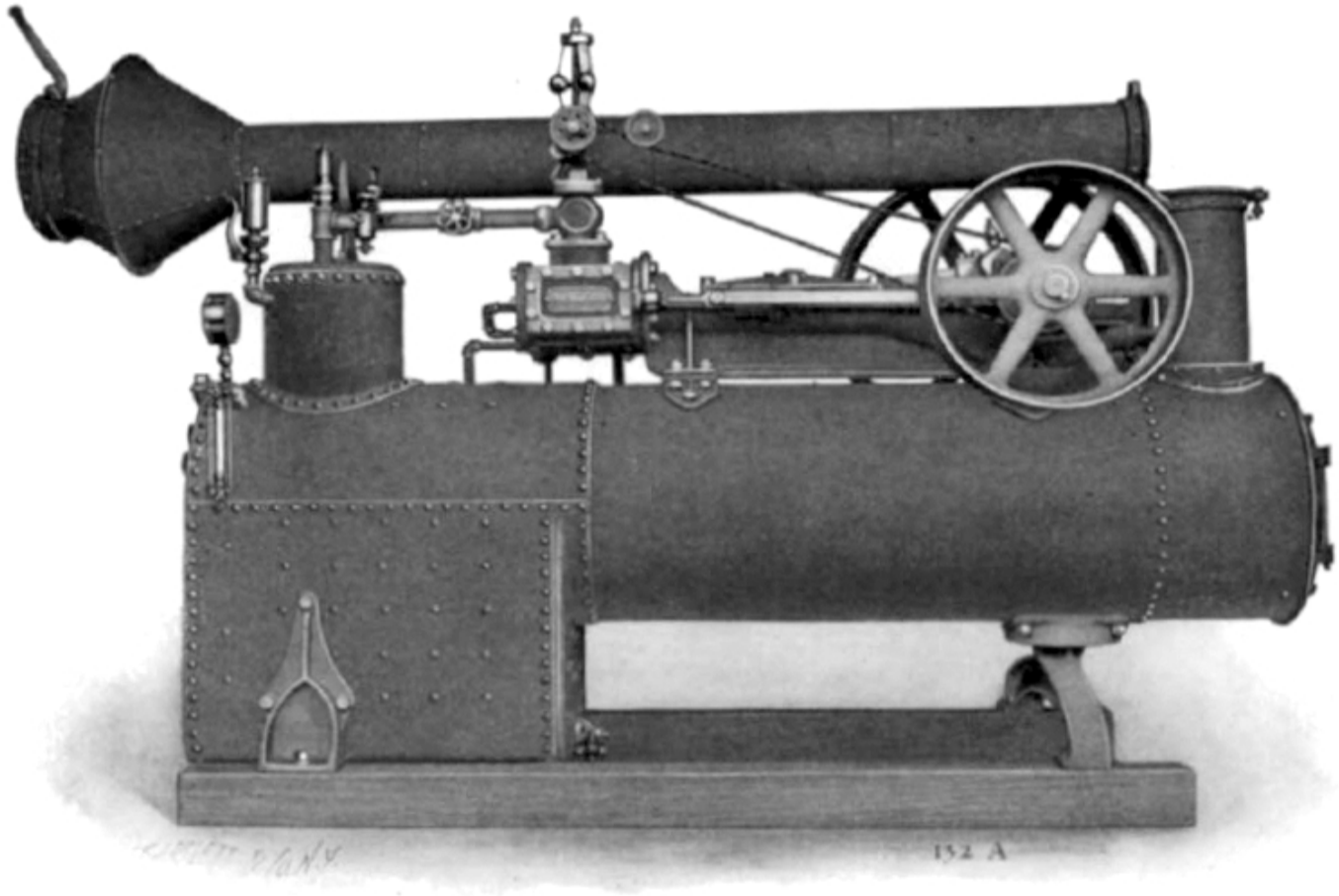


20 to 40 H. P. on Wheels, without Springs

THE above engraving shows a side view of our patented "Eclipse" Portable Engines, 20 to 40 horse power, inclusive. In these larger sizes we have applied our new method of mounting the boiler on sills, giving great strength and stiffness. The engine and boiler are the same as described on pages preceding.

As will be noted, the truck wheels can be taken off and the outfit set down on the sills.

All our "Eclipse" Engines are manufactured in quantities, and the parts are duplicated by special machinery (as in firearms and sewing machines), which secures great accuracy and uniformity in workmanship, and also allows any part to be quickly and cheaply replaced when worn out or broken by accident.



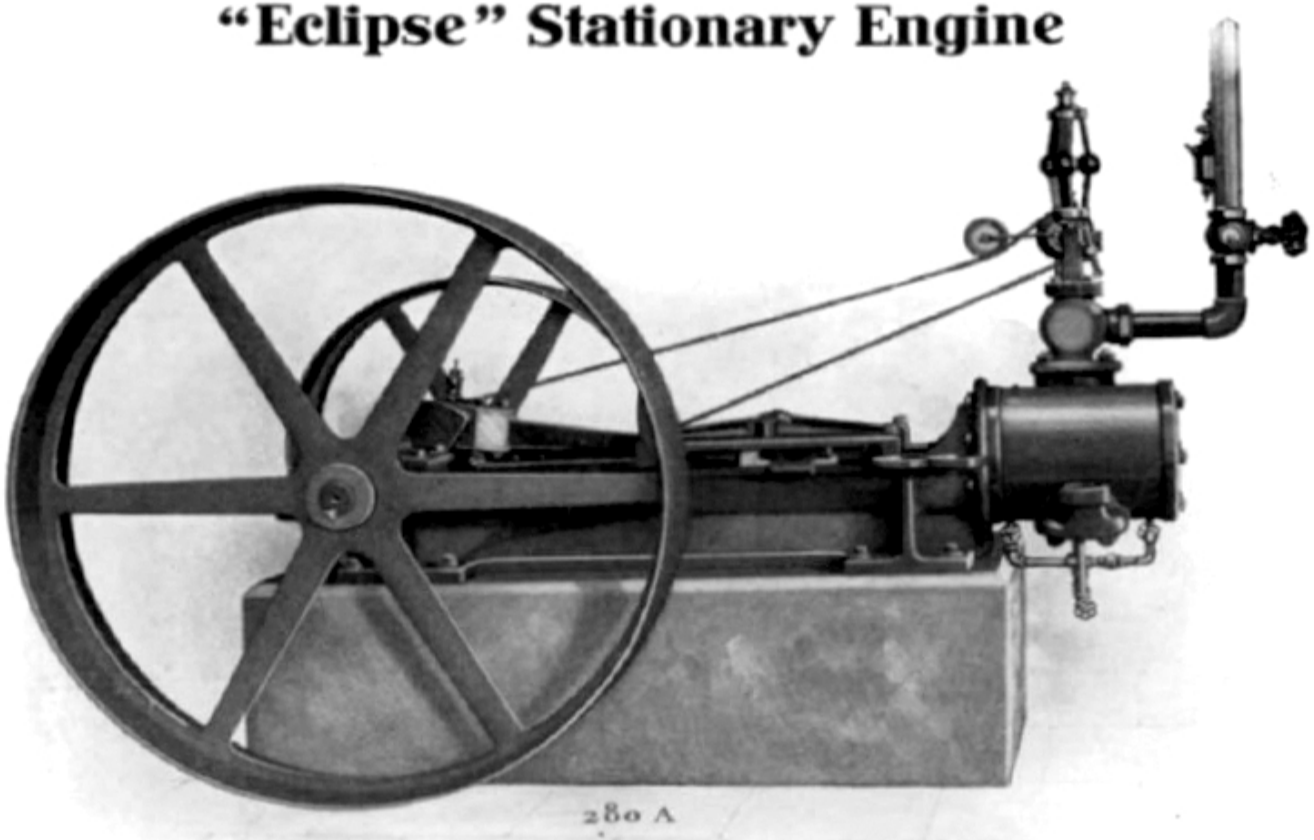
On Sills, 4 to 40 H. P.

THE crank shaft runs in the anti-friction bearing, which can be adjusted to take up the slightest wear by a set screw and gib. We consider set screws preferable to liners for taking up wear or lost motion, for the amount of adjustment is not limited, as in the case when using pieces of iron or paper. We do not use gum packing, but have all steam joints ground and fitted with metallic packing, which makes a perfect joint, not affected by heat, and never requires renewing, if care is taken in removing it when taking engine apart for examination.

Simplicity in construction has increased the popularity of our engines, because a skilled mechanic is not required to run them, common sense and average intelligence only being needed.

Frick Company Waynesboro, Pa.

"Eclipse" Stationary Engine



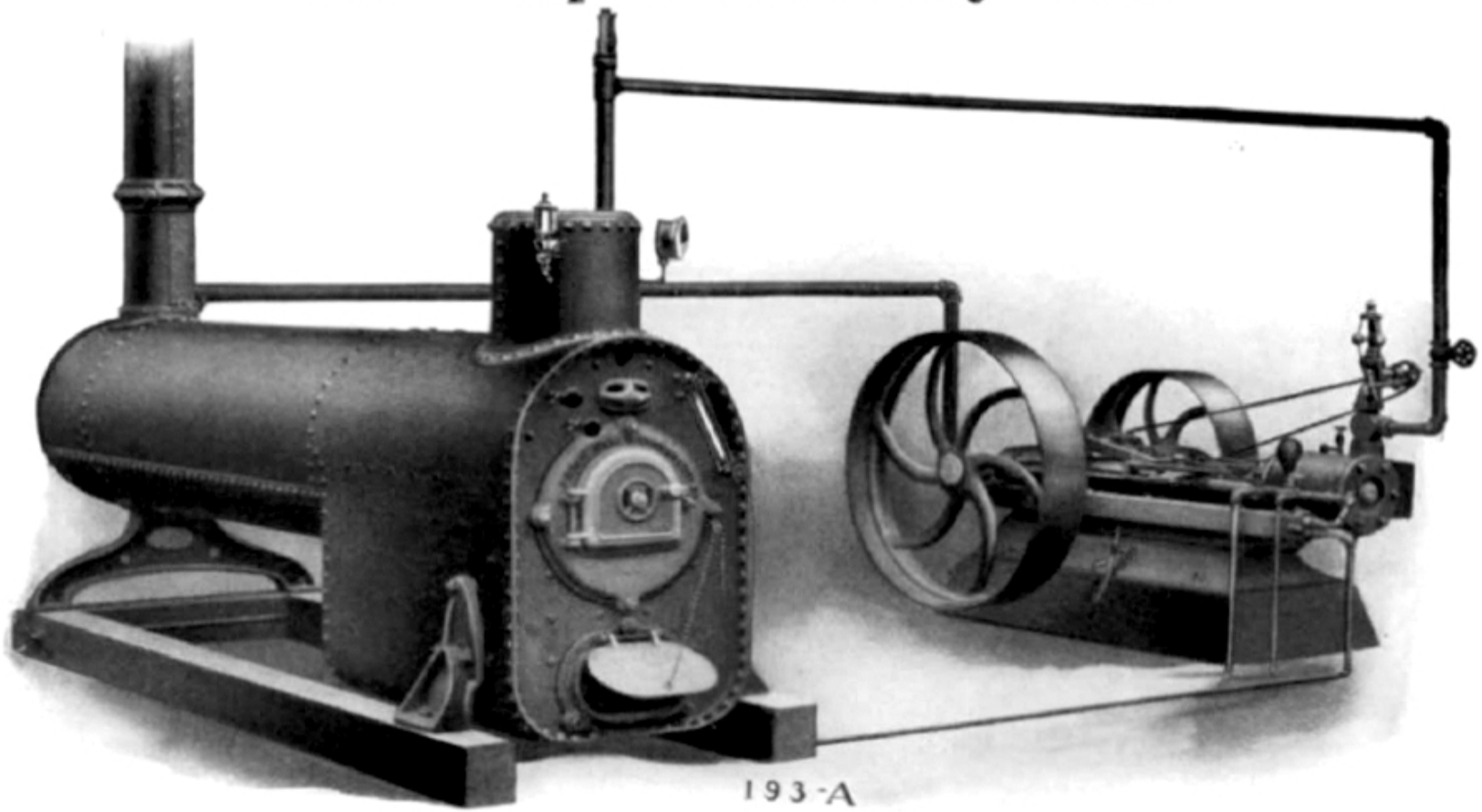
"Eclipse" Stationary Engine, without Pump or Heater and without Low Base

We call especial attention to our line of "Eclipse" Stationary Engines

FOR creameries, butchers, millers, machinists, or any person wanting a superior engine, we ask an opportunity to submit specifications and prices. To farmers who want to erect an engine with a boiler at a convenient place for water and at a safe distance from their buildings, with engine inside the room, we can offer the most perfect outfit made, and at a price but little more than an inferior engine and boiler would cost.

Bear in mind that it is only to those who want a first-class outfit at a moderate price that we expect to sell, as ours will be found cheaper in the end than an engine and boiler whose sole claim is low first cost.

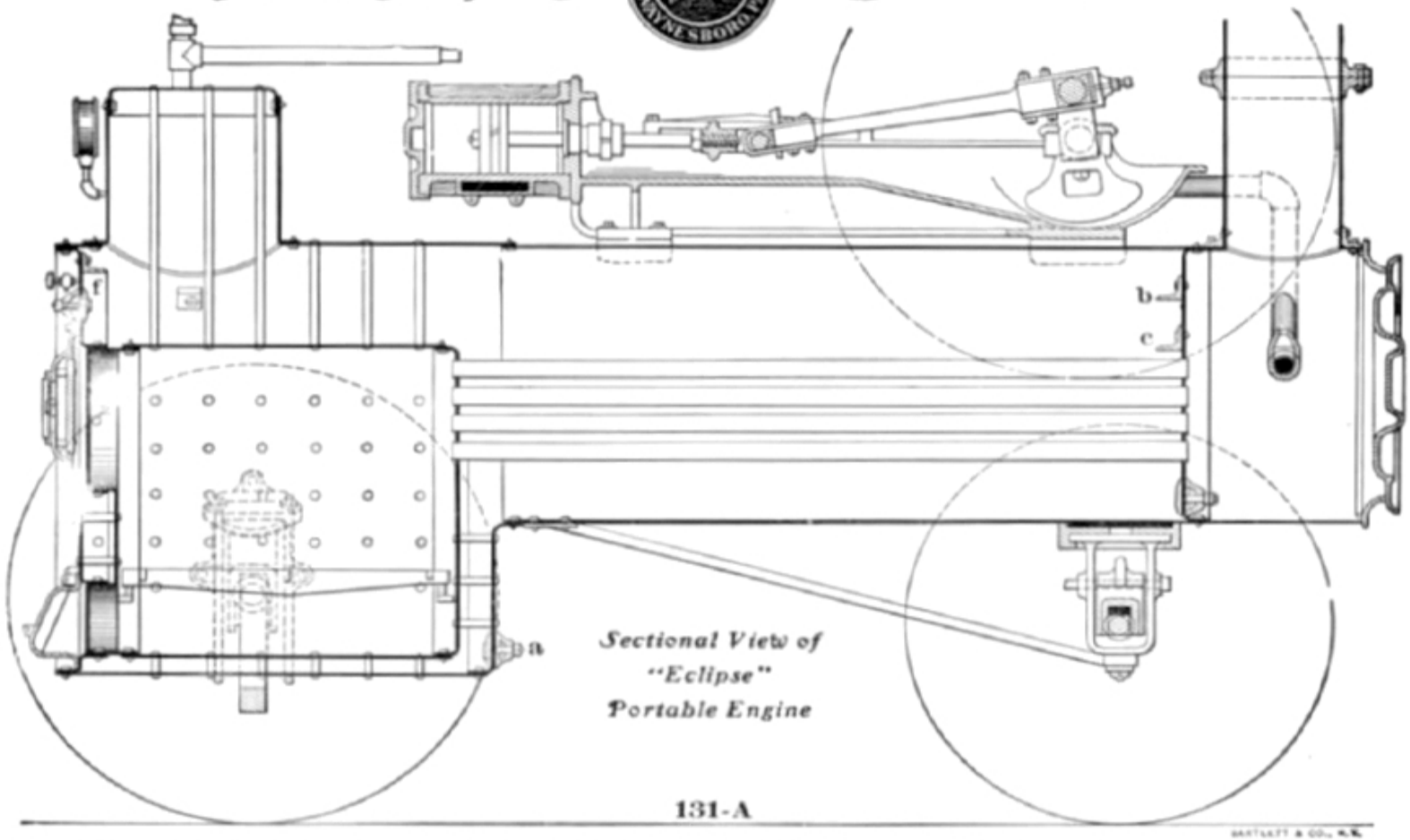
The "Eclipse" Stationary Outfit



The "Eclipse" Stationary Engine and Boiler

THE above engraving represents the "Eclipse" Stationary Engine outfit. The "Eclipse" is one of the most complete and economical stationary engines in the market. It is more easily and quickly set up than any other form of stationary, from the fact that it is self-contained, and both ends of the crank shaft being supported on the bed plate (cast solid in one piece), makes it impossible to get the working parts out of line, no matter how poor the foundation may be. It also makes the most complete saw-mill engine ever offered to the public, and we in all cases recommend it for the purpose where customers prefer detached engines, as it does not require a skilled mechanic to set it up. It is in every respect the same engine we mount on boiler for portable, and can at any time be mounted on a boiler without the necessity of sending the engine to the shop.

Frick Company Waynesboro, Pa



Sectional View of "Eclipse" Portable Engine

131-A

Engine		Usual Number Rev. Per Minute	Diameter Steam Pipe, Inches	Diameter Exhaust Pipe, Inches	BOILERS						Thickness of Material			Smokestack		Fly Wheel		Driving Pulley	
					Fire-Box			Tubes											
Diameter Inches	Stroke, Inches				Waist Diameter, Inches	Length, Inches	Height, Inches	Number	Diameter, Inches	Length, Inches	Shell, Inches	Heads, Inches	Tube Sheet, Inches	Diameter, Inches	Length, Feet	Diameter, Inches	Face, Inches	Diameter, Inches	Face, Inches
4½	7	270	1¼	1½	21½	28	25	18	2	60	¼	5/16	7/16	8	7	36	6	20	6
5	8	260	1½	2	26	28	29¼	26	2	60	¼	5/16	7/16	9	8½	36	8	24	8
6	9	250	1½	2	26	30	29¼	30	2	64	¼	5/16	7/16	9	8½	42	8	28	8
7	10	225	1½	2	28	32	31¼	36	2	69	¼	7/16	7/16	11	10½	48	10	36	10
8	10	225	2	2½	29½	39	32¼	40	2	72	¼	7/16	7/16	11	10½	48	10	36	10
9	12	210	2½	3	33½	42	37¼	41	2¼	84	¼	7/16	7/16	13	16	54	12	36	12
10	12	210	2½	3	36	48	41¼	48	2¼	96	¼	7/16	7/16	15	20	54	12	36	12
10	16	190	2½	3	36	54	41¼	54	2¼	96	¼	7/16	7/16	15	20	64	14	42	14
11	16	190	3	3½	42	62	54	67	2¼	102	5/16	7/16	7/16	20	25	64	14	42	14

Frick Company's "Eclipse" Saw Mills

WE build, for lumbermen's, farmers' and woodworkers' use, a line of saw mills ranging from the smallest portable mill upwards, as shown in the following pages. They are designed with special reference to the service required. Their daily capacities are from 2,000 to 20,000 feet of lumber per day.

The "Eclipse" Portable Circular Saw Mill is manufactured in four sizes: The No. 0 Saw Mill is built standard, with 18 feet of carriage, 43 feet of ways and two simultaneous ratchet head blocks with patent dogs. The mandrel pulley is 24 inches in diameter, and, being utilized for attaching the variable friction feed, cannot be changed in size. With this mill we do not furnish binding pulley or frame, or axles and wheels for log carriage, unless the order so specifies, at slight additional cost.

The No. 01 Mill is built standard with 20 feet of carriage, and 55 feet of ways, 25 feet of carriage and 65 feet of ways, or 30 feet of carriage and 75 feet of ways, having two simultaneous ratchet head blocks with upper and lower dogs. To this head block we can attach parallel knee or taper attachment specially designed for this mill. We also furnish regularly with this mill improved variable friction feed, rope drive, binding pulley, and frame for main belt, and one pair of axles and wheels for log carriage.

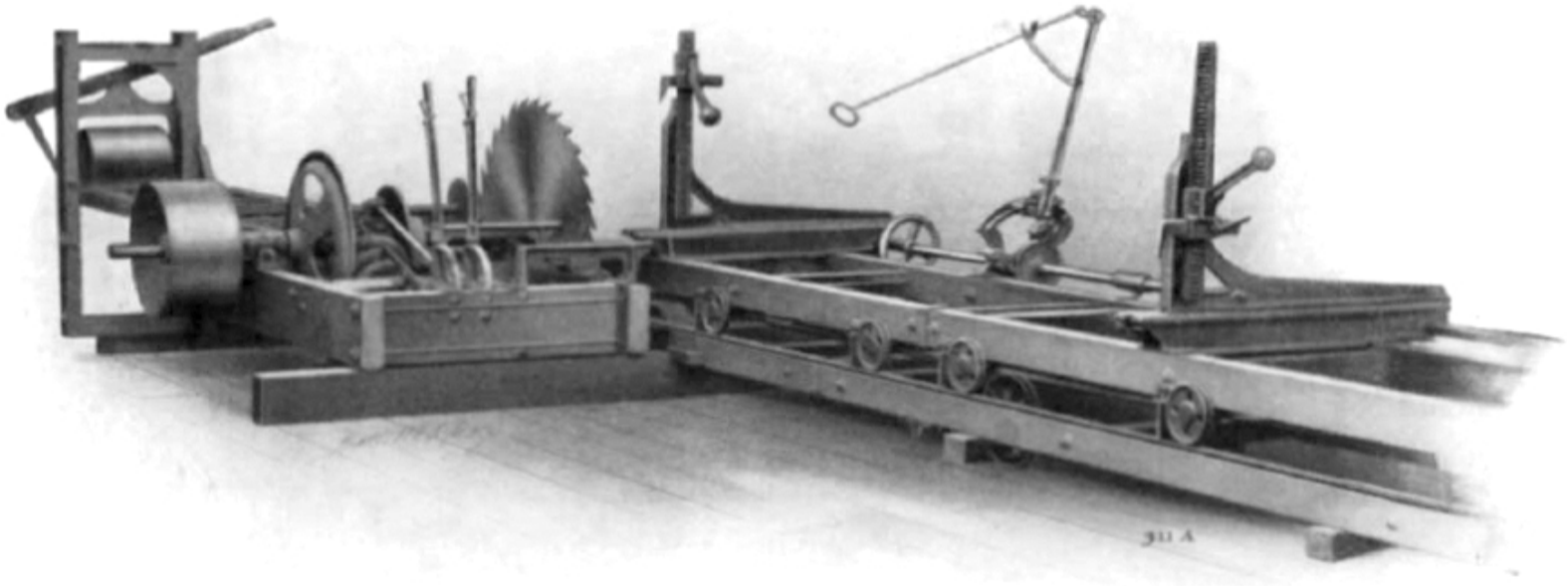
The No. 1 Mill is built standard with 20 feet of carriage and 55 feet of ways, 25 feet of carriage and 65 feet of ways, or 30 feet of carriage and 75 feet of ways, having two simultaneous ratchet head blocks with upper and lower dogs. To this head block we can attach parallel knee or taper attachment. We also furnish with this mill regularly improved variable friction feed, rope drive, binding pulley and frame for main belt, and one pair of axles and wheels for log carriage.

The No. 2 Mill is built standard with 25 feet of carriage and 65 feet of ways, or 30 feet carriage and 75 feet ways, having two simultaneous ratchet head blocks with upper and lower dogs. To this head block we can attach parallel knee or taper attachment. We also furnish with this mill regularly improved variable friction feed, rope drive, binding pulley and frame for main belt, and one pair of axles and wheels for log carriage. You will note this mill has the same attachments and improvements as our No. 1 Mill, but is built heavier in parts, and having about one-third more carriage axles and wheels than our No. 1 Mill.

We can, and do frequently, furnish the above mills with greater lengths of carriage and ways and more head blocks when desired by purchaser. The above, however, are manufactured and carried in stock, and, when wanted, we can furnish any of our mills with length of carriage and ways and number of head blocks to suit the trade.

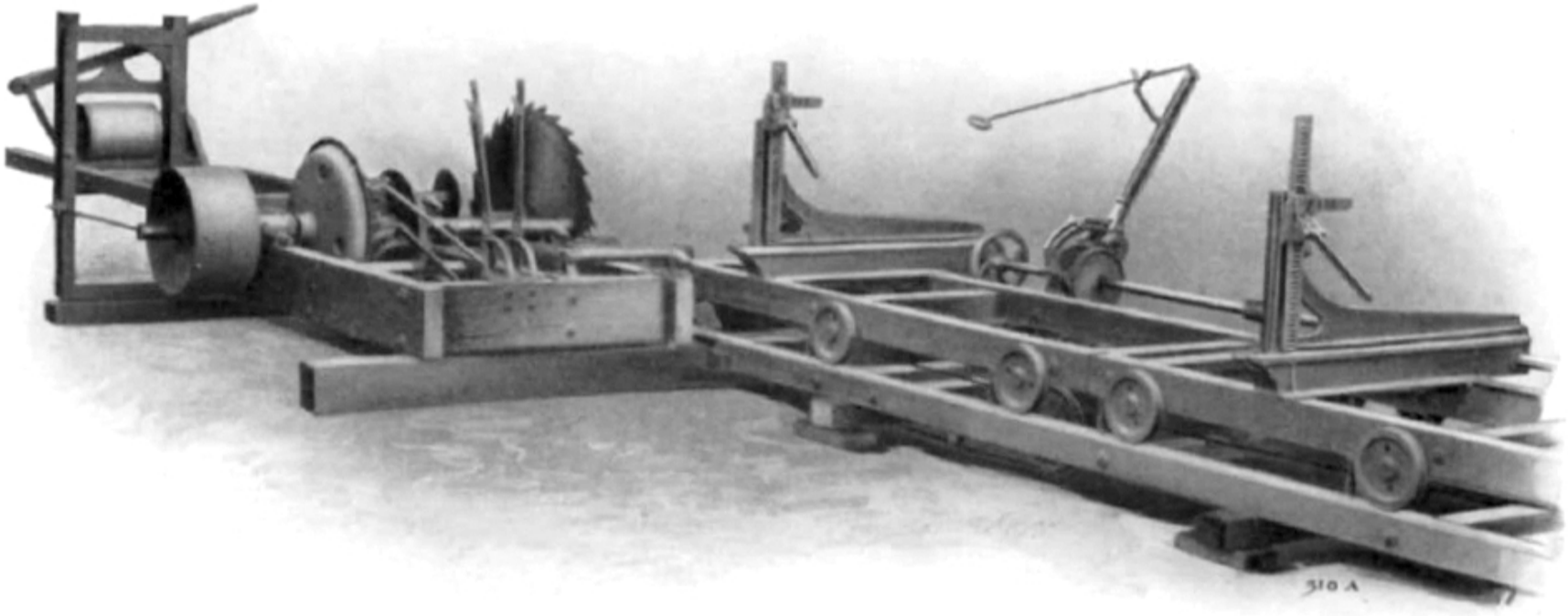
Double Circular Saw Mill: We also furnish, when wanted, a double circular saw mill, as shown on page 58 of this catalogue. This mill is, in every respect, the same as our No. 2 Mill, except the husk is built wider so as to receive the upper saw rigging. You will, therefore, note that our Standard No. 2 Mill cannot be converted into a double mill unless the husk is widened so as to receive the top saw frame. We cannot furnish the upper saw rigging with our No. 1 Mill under any circumstances.

If in need of saw mills for any purpose, please let us hear from you.



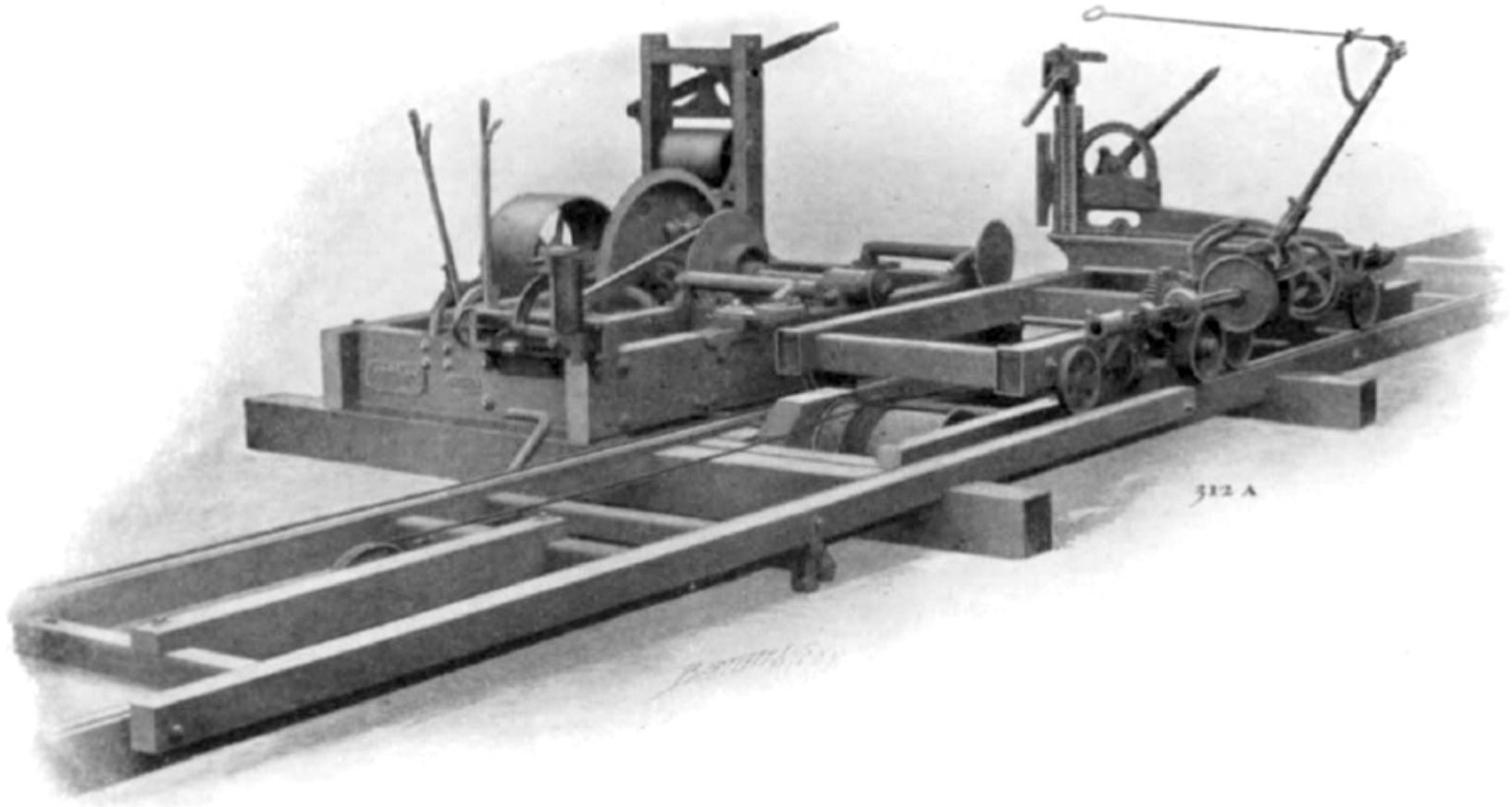
"Eclipse" No. 01 Saw Mill

THE above is a cut of new No. 01 Saw Mill, designed to fill a long-felt want as a light, medium-sized saw mill between our No. 0 and No. 1 Mills. It is well suited to be operated with from a 10 to a 15 H. P. engine, sawing from 2,000 to 5,000 feet of lumber per day. This mill will swing a 56-inch saw; knee opens 38 inches, has 8-inch carriage wheels, and will be furnished with all our late improvements, such as Double Lever improved variable friction feed, rope drive, self-adjusting and self-oiling boxes, binding pulley and frame, one pair of axles and wheels for log carriage; also the following extras at slight additional cost, special parallel knee or taper attachment, gauge roll, and footset and receding attachment.



"Eclipse" Nos. 1 and 2 Single Saw Mills

THE above cut represents our Nos. 1 and 2 Single Saw Mills furnished standard with simultaneous ratchet head blocks, self-adjusting, self-oiling boxes, double lever variable friction feed, and rope drive. Will swing 62-inch saw; has 10-inch carriage wheels, and knee opens 44 inches. At slight additional cost can be fitted with these extras: parallel knee or taper attachment, gauge roll, footset and receding attachment; also old style hand receder.



WE have made some very important and valuable improvements in our No. 01, No. 1 and No. 2 Saw Mills, giving the operator better control of the feed mechanism. Above is a very clear and accurate illustration of this improvement.

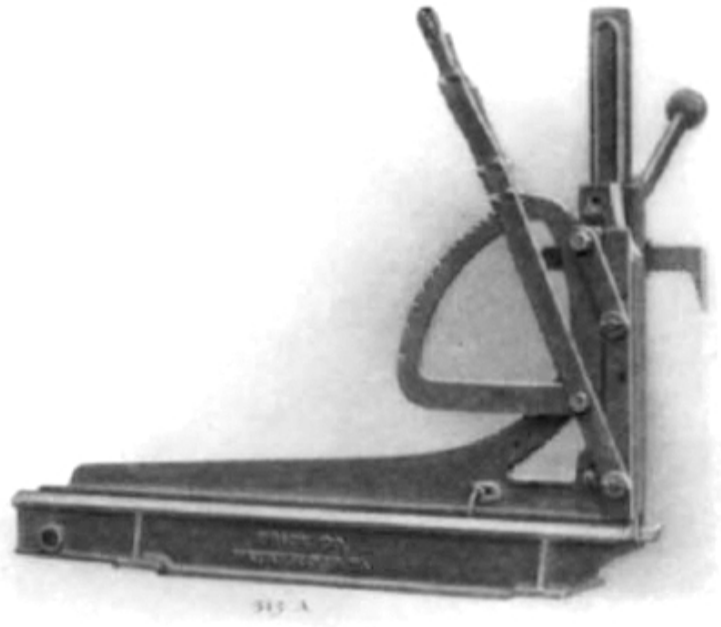
The left-hand lever, as shown in cut, is for the purpose of increasing or diminishing the rate of the feed, and the notches are for the purpose of holding the lever at any desired feed. By means of this lever the sawyer can vary from minimum to maximum feed, as he prefers, without stopping the log.

The right-hand lever is used to feed and gig back, and has a pawl which engages a notched arc to hold the friction wheel to the feed disc. In gigging back, the lever is pulled past the notched part of the arc to avoid possibility of locking when running back. This arrangement gives the operator power to exert sufficient force on the friction wheels to stop or start the carriage instantly.

Our latest improved feed has two friction surfaces of different diameter; one for feeding, and the other for gigging back, which allows the carriage to be carried back much faster

than when only one is used, and is much more durable, thus reducing friction to a minimum, and so equalized on the mandrel as to avoid end thrust or heating of boxes from end pressure. This device is a decided advantage over the old style of feed, dispensing with the annoyance of belts and the inconveniences incident thereto.

OUR Nos. 01, 1 and 2 Mills are now all built with rope feed, making the ways twice the length of the carriage plus 15 feet, thus giving ample extra ways so as to be able to saw a longer log on same length of the carriage than with rack feed, as well as having plenty of room to clear the husk at either end when putting on a log or taking off lumber.



Style of Taper Attachment for No. 01 Mill Only

The above cut gives style of head block used only on our No. 01 Mill, showing patent upper and under dogs and taper attachment. This head block with upper and under dog is similar to that used on our Nos. 1 and 2 Saw Mills. The taper attachment, however, is a special design for this mill only, as shown in cut.

The cut on page 54 is designed to show Cable Feed as fitted on our "Eclipse" Saw Mill. Clear view is given of sheave pulley, the smooth-faced drum so arranged as to give least amount of wear on wire cable. Notice shield over end of drum and pinion between feed shaft and drum. This shield thoroughly protects the gearing at this point from dust and dirt. This arrangement of rope drive has been used for several years with entire satisfaction to our customers.

COMBINATION GAUGE AND LUMBER ROLL. This attachment is designed with polished metal roll mounted on a substantial base and adjustable by means of a screw to form a gauge for sawing any thickness of timber up to seven inches. The base is provided with a plainly graduated scale which, in connection with the screw adjustment, makes change in gauge convenient and trustworthy. When not needed as a gauge roll in upright position, can be let down parallel with base, then serving as a slab roll. This device is entirely new with us and is a combination gauge and lumber roll that has already been highly appreciated by practical saw-mill men.

FOOT SET AND RECEDING ATTACHMENT is a device of an approved design and construction for quickly and conveniently moving backward or forward the head block ells, and is operated from the sawyer's position by means of a foot-set lever, or treadle, and when used in conjunction with our improved (Patent) Gauge Roll, forms one of the most satisfactory and profitable combinations yet presented to the modern sawyer. Fully illustrated in cut on page 54.

Our Lever-Setting Dog requires no hammer or mallet to force it into or draw it from the log, and will always hold the log or plank in proper position. Our Under Dog, for preventing log or plank from slipping from the head block, is operated by a lever.

Engraving on page 54 shows taper attachment on head block, which takes place of independent set works—note the tee partially extended with opening in face of knee in which it is embedded when not in use. Also notched arch with set lever in angle of knee. Arch is graduated to quarter inches with throw of 4 inches when extended to full length. This is without doubt the simplest and most positive device for sawing tapered lumber ever put on the market. This taper attachment is furnished only with our Nos. 1 and 2 Mills at a slight additional cost.

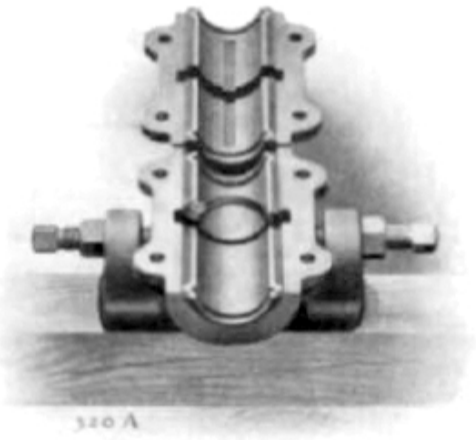
The Arbors of our mills are very heavy, and have long, self-adjusting, self-oiling pivoted bearings held in place by set screws, by means of which the lead of the saw can be changed while in operation.

Our Saw Guide

The Saw Guide is made in halves, and adjusted by set screws, without danger to the sawyer while the saw is in motion, and is the only guide which allows the wood to be put in *with the grain to the saw*. The great advantage of this will be seen at once by all practical sawyers. We can also use a longer guide block than can be put in any other guide. It is so constructed as to draw the dust into the saw pit and prevent its being scattered over the mill.

The Axles upon which the truck wheels of the carriage are fastened pass through under the carriage from one beam to the other. The axles run in boxes made in halves; the upper half, against which is the pressure, is babbitted, and the lower half contains wool and oil, securing constant lubrication. The truck wheels are 10 inches in diameter and provided with dirt fenders, as shown.

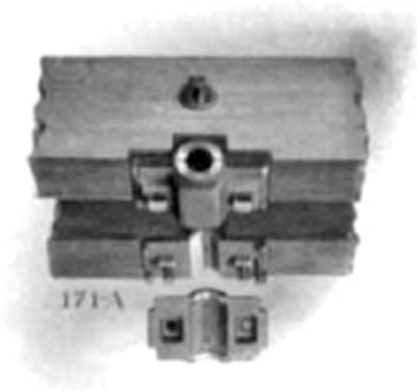
All our mills are put together and run at the works before shipping. The saw is accurately fitted to the mandrel, and the different sections of carriage and ways are framed together in such a manner that they cannot get out of place during transportation.



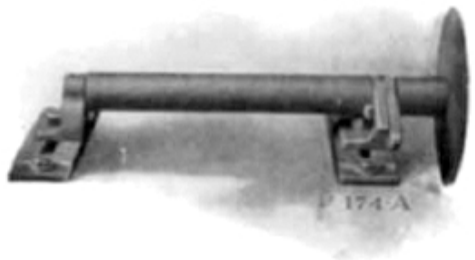
View of Mandrel Box with Cap removed

We build our larger mills in two sizes, either of which is heavy enough to carry the largest log likely to be sawed. A light mill will not carry a heavy log without straining some of its parts, in which case good work cannot be done.

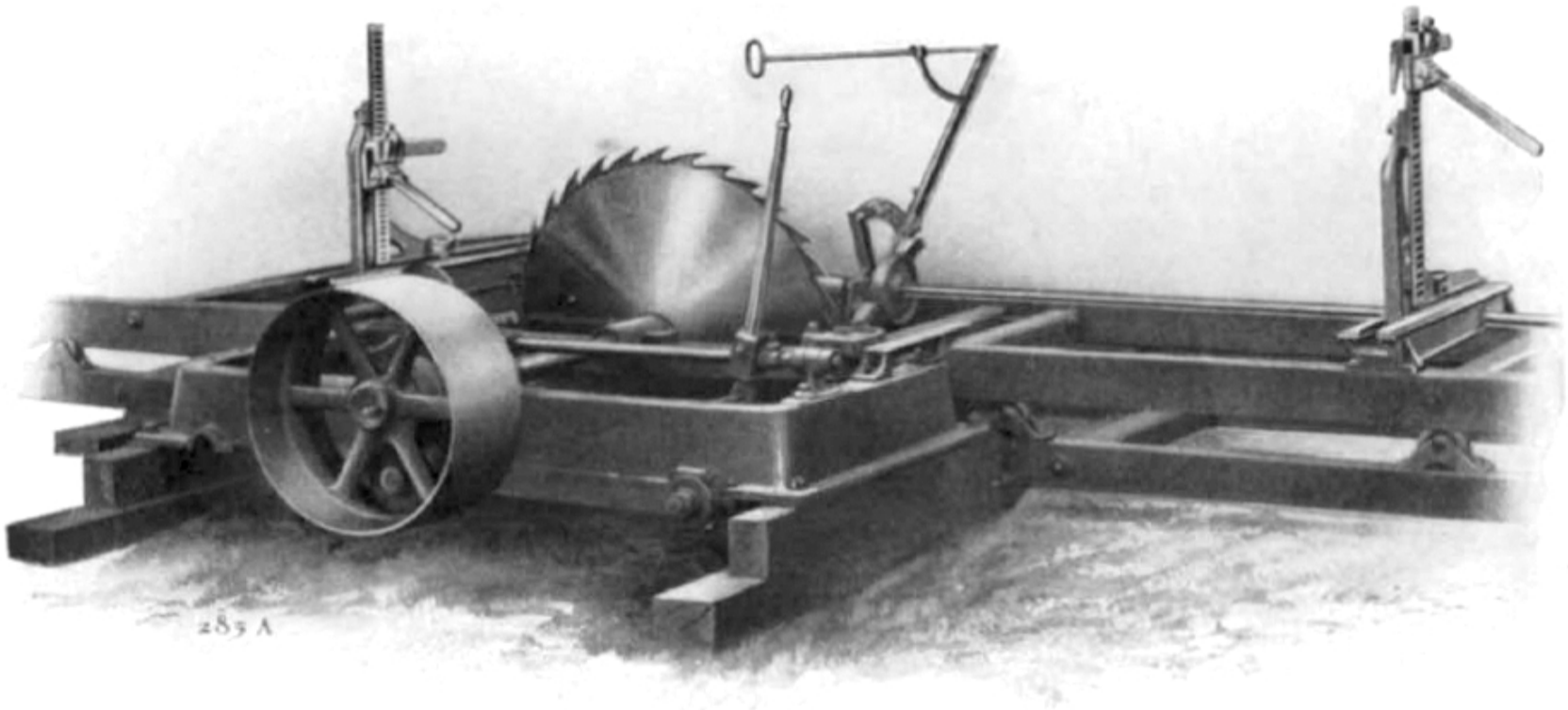
We claim that we make the best saw mill, for the price, that can be found in the United States, and ask you to give it your careful consideration. If you think of purchasing, write to us for prices and terms, which we always make as liberal as the quality of the machine will allow. Our past record and success are our guarantee for giving satisfaction in the future. *We have many competitors, but no rivals.* This you will understand if you have used our machinery; and if such has not been your good fortune, don't be behind the times and slow to advance your own best interest, but buy the "Eclipse" Saw Mill and famous "Eclipse" Engine.



Two Views of Carriage Box—one showing cap in position, the other with cap removed, giving view of babbitted box and self-oiling device in cap.



View of Lumber Roll on Saw Frame with Splitter Wheel. Notice bevel-shaped box and cap, which provide for easy flow of lumber



THE above engraving is a good one of our No. 0 or Pony Saw Mill. In designing this mill we were aware of the demand for a first-class, serviceable, small and light circular saw mill, which would be a source of profit to the purchaser by reason of its capacity for doing lots of good, clean work in hard or soft lumber; also that the mill should have all the conveniences and improvements which we have given it, such as iron husk frame, patent variable friction feed, patent quick gig back, self-oiling boxes, patent improved head blocks and knees, patent set works, light-running carriage, improved ways, etc. These and other grand features found only in Frick Company's "Eclipse" Saw Mill insure to the purchaser such a satisfactory performance and convenience in handling that it is no wonder that it should become such a favorite with saw-mill men and farmers. This No. 0 Mill will swing 54-inch saw. Husk, cast iron, 78 inches x 38 inches outside by 8 inches deep. Mandrel 2¼ inches diameter, 50½ inches long; driving pulley 24 inches diameter, 10-inch face; carriage timbers 3½ inches x 4½ inches; way timbers 3 inches x 4½ inches; knee opens 34 inches. This mill has a variable friction feed, ranging from ¼ to 3 inches, and a gig back 9 inches for each revolution of the saw. Both feed and gig back are operated by one lever, which is perfectly under control of the sawyer.

NO. 01 SAW MILL.

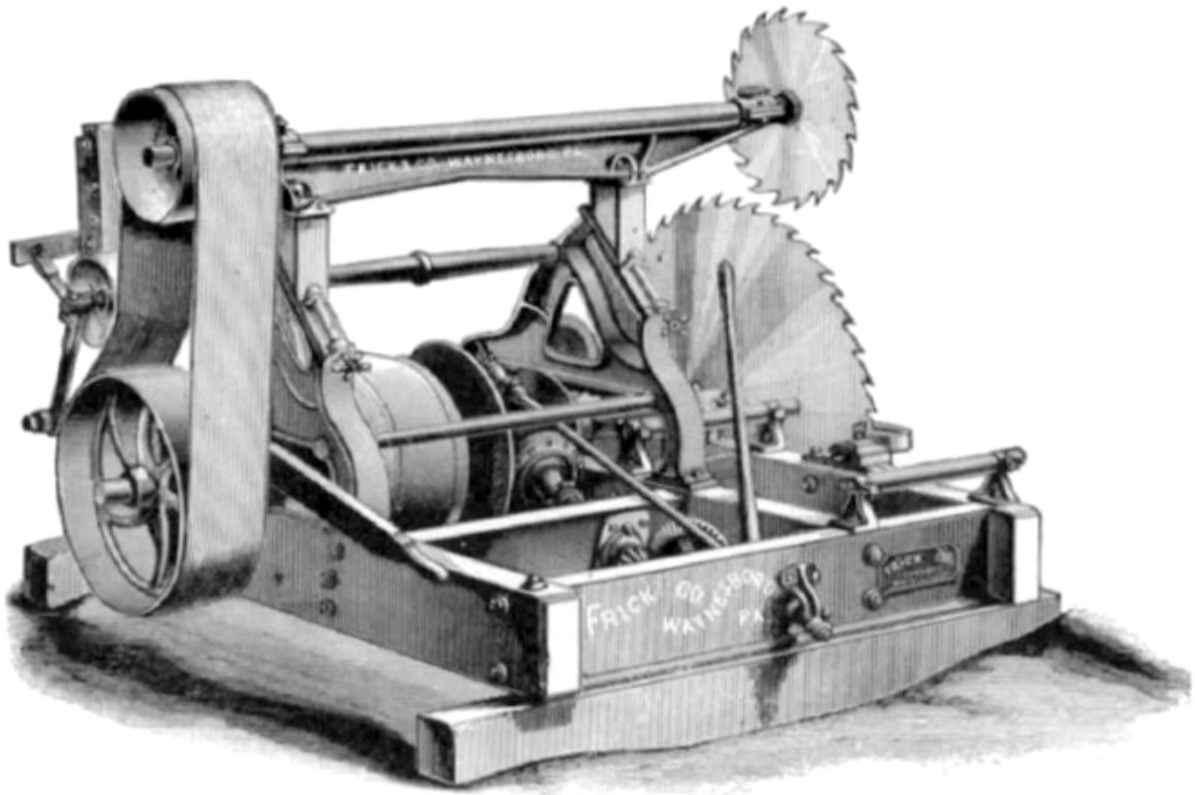
SPECIFICATION.

Will swing 56-inch saw. Carriage timbers 3½ inches x 5½ inches; way timbers 3½ inches x 5 inches; driving pulley 24 inches diameter, 10-inch face; mandrel 2⅞ inches diameter x 72 inches long; husk, wood, 4 feet 1 inch x 7 feet 11 inches outside, 11½ inches deep; knee opens 38 inches.

NO. 1 SAW MILL.

SPECIFICATION.

Will swing 62-inch saw. Carriage timbers 4 inches x 6 inches; way timbers 3½ inches x 5 inches; driving pulley 26 inches diameter, 12-inch face; mandrel 3 inches diameter x 78 inches long; husk, wood, 4 feet 4 inches x 9 feet outside, 12 inches deep; knee opens 44 inches.



The "Eclipse" Double Circular Saw Mill

NO. 2 SAW MILL.

SPECIFICATION.

Will swing 62-inch saw. Carriage timbers 4 inches x 6 inches; way timbers 3½ inches x 5 inches; driving pulley 24 inches diameter, 14-inch face; mandrel 3 inches diameter, 78 inches long; husk, wood, 4½ feet x 9 feet, outside, 12 inches deep; knee opens 44 inches.

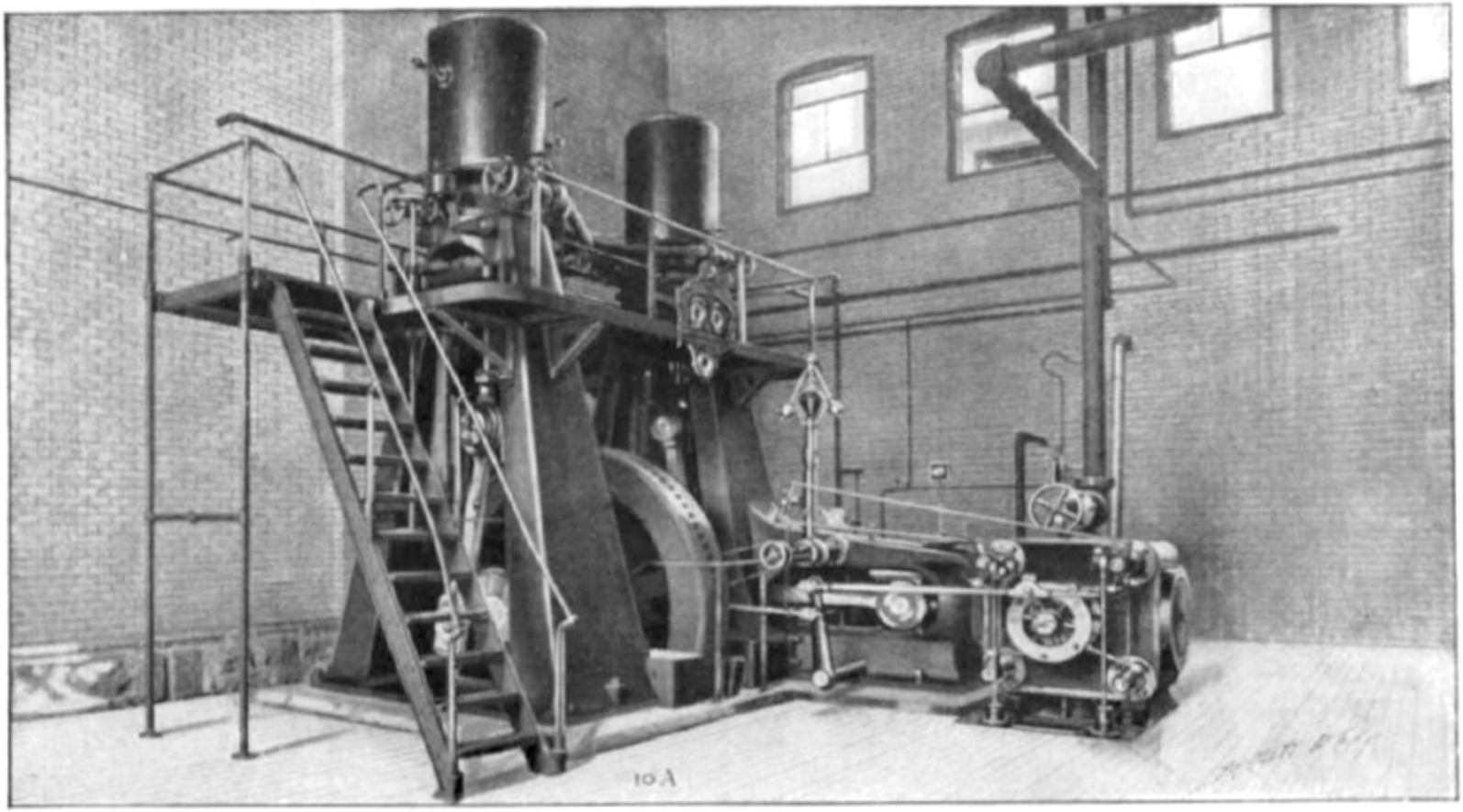
NOTE:—Nos. 01, 1 and 2 Mills are shipped with mandrel pulleys as above, unless otherwise specified.

The Top Saw Mandrel is carried in long bearings, babbitted and self-oiling, and is lined and adjusted by means of two set screws in the upper portion of the saw frame, moving it forward and back, or sideways, as may be necessary. It is moved toward or away from main saw by means of the tail screws and thumb nuts, as shown, making a handy and accurate arrangement. The top saw is started or stopped by the lever shown at the left side of frame, operating the belt tightener without the sawyer moving from his place.

Gold Medal Awarded "Eclipse" Portable Saw Mills, Louisiana Purchase Exposition

Frick Company Waynesboro, Pa.

"Eclipse" Refrigerating and Ice-Making Machinery



Engine Room, Pittsburg Ice Co., Pittsburg, Pa.

We are also builders of Corliss Engines and Ice-Making and Refrigerating Machinery for making ice and cooling breweries, cold storage, packing houses, creameries, skating rinks, hotels, etc.

We invite correspondence from parties contemplating ice-making or refrigeration in any of its branches. Our descriptive pamphlet on ice-making and refrigeration, for use of parties desiring to purchase, sent on application.

Send for special catalogue of Corliss Engines.

This page left blank intentionally.

Editor: Brian D. Szafranski; Elma, NY USA
Courtesy: Western New York Gas and Steam Engine Association
Alexander, NY USA


FRICK COMPANY.
WAYNESBORO, PA.
U.S.A.